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UNITED STATES ARMY
HEALTH CARE STUDIES
AND



CLINICAL INVESTIGATION ACTIVITY

PROCEEDINGS
SIXTH USERS' WORKSHOP ON COMBAT STRESS

A. David Mangelsdorff, Ph.D., M.P.H.

Consultation Report #88-003

August 1988

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UNITED STATES ARMY
HEALTH SERVICES COMMAND
FORT SAM HOUSTON, TEXAS 78234

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SIXTH USERS' WORKSHOP

ON COMBAT STRESS

presented at
the Holiday Inn (Riverwalk)
San Antonio, Texas

30 November - 4 December 1987

sponsored by

U.S. Army Soldier Support Center
Fort Benjamin Harrison, Indiana

Academy of Health Sciences
Fort Sam Houston, Texas

Bexar County Medical Society
San Antonio, Texas

Health Care Studies and Clinical Investigation Activity
Fort Sam Houston, Texas

PREFACE

This proceedings documents the presentations and workshops made at the Sixth Users' workshop on Combat Stress held in San Antonio. The enthusiasm of the participants contributed to the excellent discussion and exchanges. It is hoped that future efforts will build on the knowledge learned from this program.

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DEPARTMENT OF THE ARMY
US ARMY HEALTH CARE STUDIES AND CLINICAL INVESTIGATION ACTIVITY
FORT SAM HOUSTON, TEXAS 78234

November 12, 1987

Technical Division

SUBJECT: Sixth Users' Workshop on Combat Stress

Dear Participant:

Thank you for your interest in the Sixth Users' Workshop on Combat Stress. Enclosed is the tentative schedule for November 30 to December 4, 1987. The workshop will be conducted at the Holiday Inn (Riverwalk) in San Antonio, Texas. If you wish to participate, contact the Holiday Inn directly at 512-224-2500 to make your reservations.

The workshop will focus on total Army efforts devoted to cohesion and stress training. Participants will be members of the Reserve OM/psychiatric detachment units, selected National Guard and Active Army units with disaster/crisis response and/or combat missions, Army Research Institute, Walter Reed Army Institute of Research, selected TRADOC installations, and active duty mental health personnel. It will be more than just US armed forces participants: Canadian, Israeli, British, and German representatives are expected as well.

The workshop will address the following topics: 1) training for unit level stress management and for the prevention, identification, management, and treatment of battle fatigue throughout the total Army; 2) evaluating the methods used and effectiveness of the stress training packages; 3) evaluating the cohesion of individual units; 4) implementing the organizational and operational concepts for combat stress control on the AirLand Battlefield as reflected in the new unit Table of Organization and Equipment that have been developed for the Combat Stress Control medical company and detachment. Several units have developed different training programs for dealing with stress and for evaluating the effectiveness of their programs. Other presentations will focus on techniques for developing cohesion, identifying individuals at risk for becoming stress casualties, and conducting debriefings for stress casualties and for health service workers.

The program will be lectures and discussion during the first three days followed by practical exercises and workshop groups during the last two days. The practical exercises and workshop are targeted for individuals developing training programs and those providing services.

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AGENDA FOR SIXTH USERS' WORKSHOP ON COMBAT STRESS
presented at the Holiday Inn (Riverwalk) in San Antonio, Texas
co-sponsored by:
Soldier Support Center, Academy of Health Sciences,
Bexar County Medical Society, and
Health Care Studies and Clinical Investigation Activity

Registration and meeting rooms are on 7th floor of Holiday Inn (Riverwalk).

MONDAY 30 November

0715 Registration
0745 Administration [Dr David Mangelsdorff]
0800 Welcome [COL David McFarling]
0810 Cohesion in Israeli Defence Forces [Dr Reuven Gal]
0915 break
0930 WRAIR research [LTC Rick Manning]
1030 ARI cohesion research [Dr Robert Holz, Dr Guy Siebold, Dr Nora Stewart]
1130 break for lunch
1230 US Army Reserve: A true test of the relationship between unit
leadership and soldier commitment [Dr Jim Griffith]
1330 How to optimize soldiers' readiness for combat: analysis of the
components of "human readiness for combat" [LTC Tomi MacDonough]
1430 break
1445 III Mobile Armor Corps Combat Stress Control Component
(III MAC CSC²) [MAJ Donna Zepecki, SFC James Sutterfield]
1545 Canadian Forces [MAJs Ron Dickenson, Grey Cook, Gerry Resch, Gene Black]
1730 Social at the Ripples Lounge

TUESDAY 1 December

0730 Administration
0745 Psychological support concerns for emergency managers [Michael Reilly]
0845 Development of a disaster services plan by the Dallas Psychological
Association [Dr Laurie Bass]
0945 break
1000 National Disaster Medical System [Alan Compton]
1030 Psychological response to aircraft disasters [Dr Jim Butcher]
1130 break for lunch
1230 Morale as affected by psychological stress [Dr Stasiu Labuc]
1330 Intervention strategies for victims of terrorism and disasters:
European scenario [LTC Greg Laskowe]
1430 break
1445 Soldier Physical Fitness School [Dr Mike Bahrke]
1545 Stress casualties: a socio-biological model [CPT Al Johnson]

WEDNESDAY 2 December

0730 Administration
0745 US Navy SPRINT [CAPT Brian McCaughey]
0830 Psychological responses to criminal victimizations [Dr Connie Best]
0915 break
0930 Critical Incident Debriefing techniques [Dr. Jeff Mitchell]
1130 break for lunch

WEDNESDAY 2 December continued

1230 AIDS impact on reserves and National Guard [Chap. Bill Mark]
1300 Heat stress injury [LTC Barbara Carter]
1330 467th Medical Detachment, Madison, Wisconsin
1400 785th Medical Detachment, Minneapolis/St. Paul, Minnesota
1430 break
1445 113th Medical Detachment, Los Angeles, California
1515 531st Medical Detachment, Baltimore, Maryland
1545 383rd Medical Detachment, Boston, Massachusetts
1615 55th Medical Detachment, Indianapolis, Indiana
1645 Texas National Guard

THURSDAY 3 December

0730 workshop [Dr Reuven Gal]
discussion
0930 break
1130 break for lunch
1230 workshop continued
1430 break

FRIDAY 4 December

0730 overview of combat stress training modules [COL Jim Stokes]
practical exercises
0930 break
1130 break for lunch
1230 workshop continued
1430 break
1530 course conclusion

OPENING REMARKS

COL David A. McFarling, M.D.
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Health Care Studies and Clinical Investigation Activity
Health Services Command
Fort Sam Houston, Texas 78234-6060

It is my pleasure to welcome you to the Sixth Users' Workshop on Combat Stress which is being cosponsored by the US Army Soldier Support Center, the US Army Academy of Health Sciences, the Bexar County Medical Society, and the US Army Health Care Studies and Clinical Investigation Activity.

The United States Army Medical Department has the mission of conserving the fighting strength of Army personnel. A variety of programs has been developed to assist soldiers cope with distress. Historically, it has been shown that cohesive units sustain relatively fewer psychiatric casualties during combat. What is there about cohesive units that makes a difference? How can units be trained to help them cope with stress more effectively? What kinds of stress prevention programs exist, and where are they being used? The Army must be concerned about the readiness of both its reserve and active component forces. How are the reserves and National Guard units preparing to deal with combat stress? What sort of programs have intervened in disaster situations such as airplane crashes or shipboard collisions? What programs are being developed in other national military forces?

These are some of the issues which will be explored in this workshop. We have brought together individuals from around the world who are examining many of these topics. We hope to present a forum that will facilitate your discussion and exchange of ideas.

If we can be of assistance, please let me or my representatives know. I hope you have a productive experience and that you find the opportunity to enjoy San Antonio during this holiday season.

COHESION IN THE ISRAELI DEFENCE FORCES

Reuven Gal, Ph.D.

(COL, Res.)

The Israeli Institute for Military Studies

Why is cohesion important?

I would like to suggest three reasons. Cohesion is important, if not crucial, for military fighting units, because it:

- * provides a source of combat motivation.
- * enhances combat effectiveness.
- * reduces (prevents?) combat reactions.

Combat Motivation and Combat Effectiveness

This is a question that I have been asked endlessly: What is it that motivates a soldier in battle? What drives him? What is it that keeps him going, even under the most horrifying conditions of combat? Note that I am talking about combat conditions, when the soldier is really under fire.

I believe there are three factors that drive troops on in the battlefield. Three main sources of combat motivation:

- * Self - Preservation.
- * Unit - Cohesion.
- * Leadership.

By self-preservation I do not refer to the instinct that makes us "fight or flight" in the face of danger. Because that instinct by itself would have caused most soldiers to simply run away or take cover with the first shot. What I mean by self-preservation is that once in combat, the soldier will utilize whatever he has acquired throughout his training to be the one who will come out alive from that confrontation.

With regard to the other two factors - unit-cohesion and leadership - I am obviously not the first to note their importance.

...because in the crisis of battle the majority of men will not derive encouragement from the glories of the past, but will seek aid from their leaders and comrades of the present."

(Field Marshal Montgomery, 1946)

How Are These Factors Enhanced in the IDF?

a. Self-Preservation: I do not know, to this very day, a better way to develop a soldier's skills for self-preservation other than through realistic training. There is no simulation that resembles the horror of battle. The closest you can get to that is by using lots of real-live ammunition and going through tough, vigorous training. The Israeli Defence Forces (IDF) use live-

ammunition exercises extensively. Soldiers are required to sustain, in training, several days (and nights) of sleep deprivation while going through highly demanding training. This provides not only skill-building and military proficiency, but it also develops an effective psychological coping mechanism called self-confidence as a combatant.

b. Unit-Cohesion: Cohesive units are a prime factor in the IDF. Most IDF combat units show, indeed, very high cohesion and morale. Evidently, however, this is not a result of any indoctrination programs or group manipulations. It is primarily a result of the IDF manning-system and the way it is translated into the military structure and organization (Gal, 1986). Basically, this is a system which is unit - rather than individual-oriented; units may stay stable (in terms of their personnel) for years, over many cohorts and several wars, and an esprit of the kind of a regimental system is maintained. This ultimately results in high unit cohesion and fighting spirit.

c. Leadership: Once again, the uniqueness begins at organizational structure and man-power policy. The Israeli officer is brought up from the ranks. He was first a soldier, then an NCO, and consequently (only if he had proven himself the best!) - he will become an officer. Such a course of development will make him the best soldier in his unit. From this he will gain his authority and leadership. On these grounds he can practice his leadership based on personal example and the "Follow-me" dictum, and with these qualities he can lead his men against the heaviest fire.

One interesting question among combat soldiers is: "Whom do you consider your direct commander?" When this question was put to a large sample of Israeli combat troops of various corps who had fought (with these commanders) the battles of the 1973 Yom Kippur War - these were the answers (see Table 1).

Troops, then, refer predominantly to leaders who are not too close (e.g. squad or tank commanders) to be almost their peers, and not too remote as to become "high echelons." They refer to their platoon and company commanders as their leaders. Indeed it is within these frameworks that a sense of "unit cohesion" and "unit morale" can still be maintained. Beyond that is a more abstract sense of "esprit de corps," or regimental pride.

The Israeli military places heavy demands on these junior officers. Leadership is by personal example. "Follow me" is the popular dictum, especially in combat. While this is evidently very effective in leading troops against fire, this leadership style also exacts a high price. As can be seen in Table 2, officers comprised about one quarter of the overall death losses of the IDF in the 1982 Lebanon War. This is about four times their normal proportion in combat units. As can be seen in Table 2, the Lieutenants and Captains took the highest toll.

Combat Reactions

So far we have discussed how cohesion may enhance combat motivation and combat effectiveness. But cohesion, apparently, can also prevent combat reactions and psychological breakdown. While this has been clearly one of the lessons learned from World War II (Glass, 1973), it was once again demonstrated, quite dramatically in the 1973 Yom Kippur War (see Table 3).

Israeli soldiers who suffered combat reactions during that war reported lower morale in their own units, less trust toward their commanders and lower self-esteem as combatants (in comparison to a control group of physically wounded soldiers). Moreover, as shown in Table 3, among the group of neuropsychiatric casualties, there were almost four times as many soldiers who reported serving with units other than their original ones, when they had broken down. Similarly, more than 60 percent of the combat reaction group reported that they had changed teams during the combats. Only 15 percent had to do so among the control group. Thus, fighting within your own unit, beside your comrades, serves as a preventive measure; it may, indeed, protect the combatant from becoming a psychiatric casualty.

To sum, the findings from the Israeli military experience and lessons learned from the recent Israeli-Arab wars show clearly that unit cohesion plays a critical role on the battlefield. It provides a source of combat motivation, it enhances combat effectiveness and performance, and it reduces (and at times prevents) severe combat reactions.

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Table 1

Percentage of Soldiers (in each of four main group combat corps) Referring to Various Levels of Command as Their "Direct Commander"

| Levels of Command | Infantry n=462 | Armor n=1030 | Artillery n=503 | Engineer n=105 |
|---------------------------|-------------------|-----------------|--------------------|-------------------|
| Brigade Commander | 1.3 | 2.3 | 0.5 | 0.0 |
| Battalion Commander | 10.7 | 14.4 | 8.8 | 3.8 |
| Company/Battery Commander | 21.3 | 28.9 | 19.8 | 35.3 |
| | | | (36.4)* | |
| Platoon Commander | 34.0 | 22.8 | 6.0 | 39.2 |
| Squad/Section/Tank leader | 18.7 | 27.4 | 14.3 | 15.7 |

* Refers to the deputy battery commander who, in the case of the artillery, is the officer in charge of the artillerymen at the battery position.

Source: Zvulun, 1974.

Table 2
IDF Casualties (KIA and WIA) by Ranks in the Lebanon War

| | Officers | | | | Enlisted | | | | Total |
|-------------------------|--------------------|------------------|---------------------|-------------------|-----------------|-----------------------|------------------|-----------------|-------|
| | 2nd Lt/ Captain | Major/ Lt Col | Colonel/ General | Total Officers | Private/ PFC | Corporal Staff Sgt | SFC/ Mast Sgt | Total Enlstd | |
| Killed in Action | 84 | 25 | 2 | 111 | 80 | 217 | 60 | 357 | 468 |
| % from total KIA | (18%) | (5%) | (1%) | (24%) | (17%) | (46%) | (13%) | (76%) | |
| Wounded in Action | 34 | 67 | 6 | 420 | 566 | 1384 | 530 | 2480 | 2900 |
| % from total WIA | (12%) | (2%) | (.2%) | (15%) | (19%) | (48%) | (18%) | (86%) | |

Source: Gal, 1986.

Table 3
Unit Related Factors as Experienced by Two Groups of Combat Soldiers

| Factors | Groups | |
|---|-------------------------|------------------------|
| | Combat Reaction n=74 | Control Group n=100 |
| 1. Perceived unit' morale during combat as low | 72% | 0% |
| 2. Experienced loneliness | 76% | 29% |
| 3. Felt no trust toward immediate command | 42% | 5% |
| 4. Served during this war with units other than their original unit | 43% | 12% |
| 5. Changed teams in combat | 63% | 15% |
| 6. Low self esteem about own professional military knowledge | 42% | 5% |

Source: Steiner and Neumann, 1978

RESEARCH ON COMBAT STRESS AT THE
WALTER REED ARMY INSTITUTE OF RESEARCH

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The primary mission of the Division of Neuropsychiatry at Walter Reed Army Institute of Research (WRAIR) is to conduct basic research on the biological, psychological and social variables affecting, and affected by, stress and behavior under stress, especially the stresses of combat. In today's update I will cover recent activities in two of the division's four departments, one very much biological in its orientation, the other focused on social interactions.

The Department of Behavioral Biology, headed by Colonel Greg Belenky, is currently concentrating on problems resulting from our military's new-found technology for fighting at night and the Soviet Union's long-standing doctrine of continuous operations (CONOPS).

Performance degenerates as a result of cumulative sleep deprivation and fatigue in CONOPS, mental performance more rapidly than physical. Initiative, the integrating of information, planning and plan execution are the aspects of mental performance that degenerates most rapidly. With complete sleep deprivation alertness and performance decline rapidly, with mental performance declining in speed and accuracy approximately 50%, and latency to fall asleep declining to less than one minute, after two days of total sleep deprivation. With partial sleep deprivation alertness and performance decline more gradually, but after 5-7 days of partial sleep deprivation (e.g. sleep limited to 4-5 hours each night) alertness and performance decline to the same low levels as those seen following two days of total sleep deprivation.

Our research program is designed to

A. Identify those positions in which personnel are most likely to suffer sleep deprivation in CONOPS, in order to adapt doctrine, manning and cross-training to the exigencies of continuous battle.

B. Identify drugs to facilitate and improve the efficiency of brief sleep in CONOPS.

C. Identify drugs to maintain normal alertness when for two to three days sleep is not possible and to reduce the need for sleep and maintain normal alertness when for days only limited sleep is possible.

We use non-invasive, non-intrusive, solid state, wear-and-forget sleep/activity monitors to study sleep and activity in field training exercises to help us identify those positions in combat units in which personnel are most likely to be deprived of sleep. Recommendations regarding cross-training, manning, work/rest scheduling, and sleep discipline follow. We have completed a study of sleep in two battalions going through a rotation at the National Training Center, and are currently analyzing these data. Preliminary analysis indicates that soldiers sleep when they have the opportunity, but that the mission demands and the "friction" of operations restrict these opportunities,

and that when sleep is possible, poor sleep habits (e.g. sleeping sitting in a jeep, near the radio) and inadequate sleep discipline (e.g. lack of encouragement to sleep by command) limit the duration and continuity, and hence the recuperative value, of the sleep obtained.

We are also conducting laboratory studies of short-acting sleep-inducing drugs to ensure restful sleep during long-range deployments and during lulls in CONOPS. In long-range aerial deployment a simple short-acting sleep-inducing drug is adequate, as the duration of the journey is known, and it is unlikely that soldiers will need to be alert during the trip. We have completed initial studies of sleep-inducing drugs for use in long-range deployments and found that the sleep-inducing drug triazolam increases the duration and continuity of sleep in a laboratory simulation of a long range deployment. A laboratory study is currently underway to determine if triazolam-induced sleep is as restorative as non-drug sleep. In CONOPS, either an ultra short-acting sleep-inducing drug, or alternatively a sleep-inducing/reawakening drug combination, is required because soldiers who have taken the drug may have to return rapidly to full alertness if the battle situation changes. This work is in the planning stage.

Another approach lies in studies of drugs for possible use in maintaining normal alertness during CONOPS, looking for a drug that will counter the debilitation effects of 48-72 hours of total sleep deprivation. To date we have completed a study of amphetamine, the prototypical stimulant, and have begun to study nicotine. Our initial candidates for a drug that will maintain normal alertness during days and weeks of partial sleep deprivation are pemoline, deprenyl, L-dopa, or some combination thereof.

Finally, the department is studying the neurobiology of alertness, sleep and fatigue, using sleep deprivation, regional cerebral blood flow measurement, positron emission tomography, and various neurotransmitter receptor ligands. The goal of this work is knowledge regarding the neurobiological changes that occur with fatigue and thus means of reversing or attenuating these changes.

A second major research effort in the Division involves our Department of Military Psychiatry, headed by Dr. David Marlowe. An anthropologist, Dr. Marlowe has built a very productive program on what Glass has termed the most important lesson learned from World War II psychiatry: the recognition of the critical role of the small combat group, the social environment, in the emotional problems of the soldier in combat.

Prior to this decade and the development of the Unit Manning System, cohesive units were incidental creations, usually a function of the special gifts of their commanders, a fortuitous accident, or the by-product of units contending with external threats or special mission demands.

The New Manning System (now the Unit Manning System, or UMS) was begun in 1981 along lines suggested by the 1979 HQDA ODCSPER-sponsored Army Cohesion and Stability Task Force (ARCOST). The human ends envisioned in the development of the UMS and its COHORT (Cohesion, Operational readiness, and Training) unit movement system were the creation of military units possessing the kind of unit cohesion that could (a) ensure enhanced levels of bonding, confidence, and mutual trust prior to commitment to battle and, therefore, (b) resist high levels of psychological breakdown due to battlefield stress.

WRAIR's initial observations of COHORT units in USAREUR (1983-84) demonstrated that keeping first-term soldiers together after one-station-unit-training (OSUT) achieved more bonding than in conventionally organized units. During this same period, WRAIR identified two problems in realizing the original COHORT objectives. The first was extreme variability in the degree to which COHORT units were vertically bonded. The OSUT experience seemed to weld the lower ranking enlisted soldiers into a cohesive whole, but turbulence (frequent turnover) of NCOs and officers interfered with the development of vertical cohesion. In addition, some COHORT unit leaders had obvious difficulty talking informally with their soldiers. Instead of joining the unit and earning respect--as they will have to do in combat--these leaders reacted with social distance and an authoritarian leadership style better suited to leading trainees or green troops without an established social history.

Some leaders also felt threatened when the troops balked at repetitive training on skills they had already mastered and embarrassed that they had little else to teach them. It is not surprising that these COHORT companies showed satisfactory horizontal bonding; but unfortunately, they were not vertically well bonded, and they did not show dramatic increases in training because their leaders were unprepared to capitalize on the opportunity for accretive training.

Results of a second and third iteration of "psychological readiness" questionnaires by and large confirmed this notion that vertical cohesion was crucial. Without it, COHORT companies slowly dropped back close to the level of conventional units. Clearly, stability is not enough. Current work is focused squarely on identifying vertically cohesive units, and the leadership actions that made them that way.

Creating Vertically Cohesive Units

In units that established a reasonable degree of chain-of-command stabilization, vertical cohesion varied according to three major ways. The officers and NCOs who developed cohesive companies, for instance, differed from their less successful colleagues in their knowledge of their profession, in their ways of interacting with their troops, and in their focus on the mission.

First and foremost, the successful leaders were more interested in and knowledgeable about the process of making war than were the others. Superiors, peers, and subordinates judged them to be masters of their profession.

Secondly, successful leaders fundamentally respected and cared for their subordinates. Respect did not make the leaders blind to limitations, but there was a basic sense that leaders and followers were all worthy members of the fraternity of arms. Such leaders did not fear that their subordinates would ruin their reputations unless their behavior was closely circumscribed. This factor has reliably differentiated vertically cohesive units from noncohesive units, not only in COHORT units but in other units in CONUS and USAREUR studied over the past five years, and in units studied during World War II.

Leaders and followers in vertically cohesive units respected each other for their abilities, and had no need for rituals of subordination. This phenomenon has been found in the most effective units of the U.S. Army, the German Wehrmacht, and the Israeli Defense Forces. Further, the officers, sergeants, and privates in vertically cohesive units liked each other, and

sometimes the affective levels were intense, resembling those found in tightly integrated units in combat.

Further, leaders who fully exploited the potential of the COHORT system trusted their subordinates and worked to develop them. Ownership of the mission, and the sense of being entrusted with it, strengthened vertical cohesion and confirmed the feeling of mutual commitment to a common goal. Units on a dispersed Airland battlefield, for instance, can accomplish their missions only if they have experienced the processes of acquiring information, exercising authority, and thinking independently. Soldiers who own the mission become effectively committed to it and cognitively involved with it.

Successful leaders interacted with their soldiers through attention to their personal, familial, and professional welfare. The effective leaders had good judgment about what constituted a serious personal concern and what was an effort to "get over." They were not afraid to rely on their soldiers' ability to handle being trusted and respected. In cohesive units, we noted more cases of soldiers understating physical or familial problems than overstating them. The way these leaders cared for their soldiers in no way resembled coddling or currying favor with them; nor was caring incompatible with discipline. Caring consisted of keeping promises and conserving soldiers' physical and psychological resources. Caring included punitive action; a soldier who misbehaved expected to be punished. These leaders realized that their failure to punish misconduct would trivialize the effort of their better soldiers.

The third factor common to vertically cohesive units Army-wide was focus on the combat mission. Committed soldiers felt that hard work and sacrifices designed to develop a solid combat capability dignified, or even ennobled them. While a valid mission lent meaning to hard work and misery, deviation from that mission made a mockery of the soldiers' sacrifices and efforts. Deviation also aroused anxieties because most privates completed basic and individual training believing in the likelihood of combat. Demonstrations, competitions, and "eyewash," interfered with efforts to become the kind of proficient fighters who can survive in battle. Similarly, shortages of fundamental items of equipment raised doubts about whether the mission was real or not, and about whether the military hierarchy above their unit was competent to support them in battle. Belief in the mission was fundamental to the soldiers' sense of self-worth; when leaders compromised that belief, the psychological fabric of vertical cohesion began unraveling.

Much work remains to be done in this crucial area, and, frankly, much selling of the products. We believe we owe it to the front-line soldier, however, as well as to the Army Medical Department, which is faced with treating the stress casualties we cannot prevent.

A MEASURE OF COHESION WHICH PREDICTS UNIT PERFORMANCE AND ABILITY TO WITHSTAND STRESS

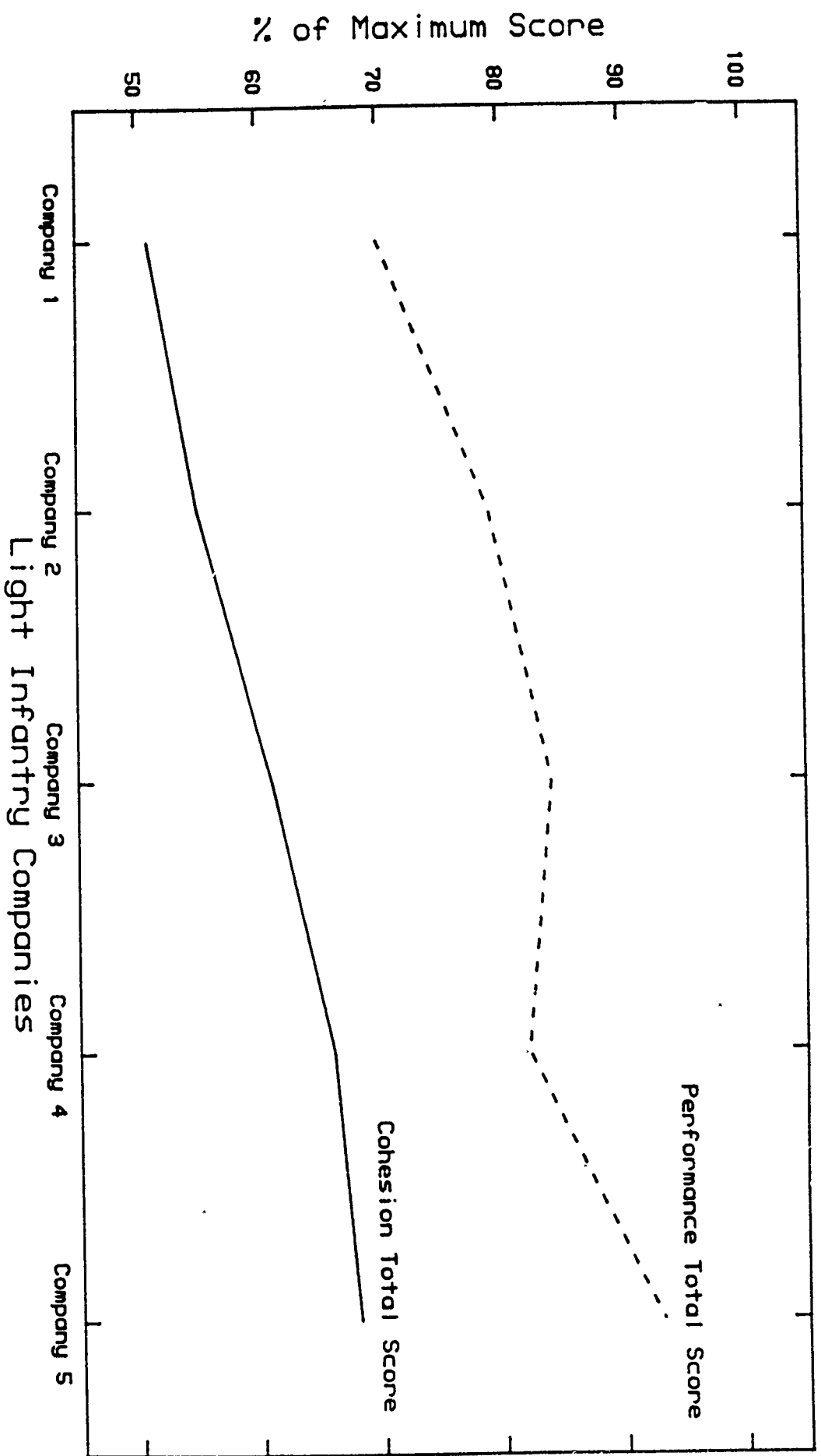
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The purpose of this paper is to report on a 20 question measure of cohesion and the ability of the measure to predict the performance of units on a 100 mile road march. Cohesion is conceptualized as the structured pattern of social relationships between unit members, individually and collectively, necessary to achieve the unit's purpose. To be more specific, cohesion is conceptualized in terms of the bonding between first term soldiers (horizontal bonding), between first term soldiers and their leaders (vertical bonding), and between all the soldiers and their unit (organizational bonding).

The 20 item questionnaire (Appendix A) was administered to 5 (COHORT) line companies from two battalions of the same light infantry brigade in September 1987. The next week the companies started, one per day, on the 100 mile march. The road march exercise was designed to challenge and evaluate the line companies with a special focus on leading, training, and caring for soldiers under arduous conditions. The march was divided into five segments or lanes of about twenty miles each. At the end of each lane, the company conducted an exercise or brief mission. Each company completed one lane per day. Impartial evaluators on each lane measured how well the company and its leaders got the soldiers over the march route fit to fight. The evaluations covered four broad categories: medical/physical fitness, morale and attitude, the soundness of road march tactics, and mission accomplishment.

The unit scores on the cohesion scales (every 2 questions formed a scale) within the 20 item instrument were correlated with the medical/fitness ratings (r range of .45 to .71), the morale ratings (.56 to .80), the march tactics rating (.55 to .92), the mission ratings (.68 to .97), and the total evaluation score (.71 to .92) for the 5 companies in the sample. Given that the number of cases is only 5 companies, the results must be considered only as suggestive. In summary, the results are presented in Figure 1. As the cohesion scores increase, the performance scores increase. The direct causal mechanisms are not yet identified but are the subject of ongoing research. The one company (number 4) where the performance score does not increase noticeably with an increase in the cohesion score is a special case because a local event was attended by 60% of the company during lanes 1 and 2; they did not rejoin their company until lane 3. This anomaly resulted in lower morale and attitude ratings. However, overall the cohesion scales were highly correlated with performance under stressful conditions.

Figure 1. Cohesion and Road March Performance Scores



APPENDIX A

PLATOON COHESION INDEX

Directions: This questionnaire is designed to help your Company Commander assess the general level of cohesiveness in your platoon. Fill in the information below and respond to each question by marking an "X" on the line which best represents your view. Your answers will be combined with the other soldiers in your platoon to get an overall picture.

Write In Your Platoon: _____
Company: _____

Check Your Pay Grade: E1-E4[]
E5-O2[]

1. First-termers in this platoon uphold and support Army values.

[+2] _____ A. Strongly Agree
[+1] _____ B. Agree
[0] _____ C. Borderline
[-1] _____ D. Disagree
[-2] _____ E. Strongly Disagree

2. Leaders in this platoon set the example for Army values.

[+2] _____ A. Strongly Agree
[+1] _____ B. Agree
[0] _____ C. Borderline
[-1] _____ D. Disagree
[-2] _____ E. Strongly Disagree

3. First-termers trust each other in this platoon.

[+2] _____ A. Strongly Agree
[+1] _____ B. Agree
[0] _____ C. Borderline
[-1] _____ D. Disagree
[-2] _____ E. Strongly Disagree

4. First-termers in this platoon care about each other.

[+2] _____ A. Strongly Agree
[+1] _____ B. Agree
[0] _____ C. Borderline
[-1] _____ D. Disagree
[-2] _____ E. Strongly Disagree

5. How well do first-termers in your platoon work together to get the job done?

[+2] _____ A. Very Well
[+1] _____ B. Well
[0] _____ C. Borderline
[-1] _____ D. Poorly
[-2] _____ E. Very Poorly

6. First-termers in this platoon pull together to perform as a team.

[+2] _____ A. Strongly Agree
[+1] _____ B. Agree
[0] _____ C. Borderline
[-1] _____ D. Disagree
[-2] _____ E. Strongly Disagree

7. Leaders in this platoon trust each other.

[+2] _____ A. Strongly Agree
[+1] _____ B. Agree
[0] _____ C. Borderline
[-1] _____ D. Disagree
[-2] _____ E. Strongly Disagree

8. Leaders in this platoon care about each other.

[+2] _____ A. Strongly Agree
[+1] _____ B. Agree
[0] _____ C. Borderline
[-1] _____ D. Disagree
[-2] _____ E. Strongly Disagree

9. First-termers in this platoon can get help from their leaders on personal problems.

[+2] _____ A. Strongly Agree
[+1] _____ B. Agree
[0] _____ C. Borderline
[-1] _____ D. Disagree
[-2] _____ E. Strongly Disagree

10. Leaders and first-termers in this platoon care about one another.

[+2] _____ A. Strongly Agree
[+1] _____ B. Agree
[0] _____ C. Borderline
[-1] _____ D. Disagree
[-2] _____ E. Strongly Disagree

11. Leaders and first-termers in this platoon train well together.
 [+2] ☐ A. Strongly Agree
 [+1] ☐ B. Agree
 [0] ☐ C. Borderline
 [-1] ☐ D. Disagree
 [-2] ☐ E. Strongly Disagree
12. Leaders in this platoon have the skills and abilities to lead first-termers into combat.
 [+2] ☐ A. Strongly Agree
 [+1] ☐ B. Agree
 [0] ☐ C. Borderline
 [-1] ☐ D. Disagree
 [-2] ☐ E. Strongly Disagree
13. First-termers in this platoon know what is expected of them.
 [+2] ☐ A. Strongly Agree
 [+1] ☐ B. Agree
 [0] ☐ C. Borderline
 [-1] ☐ D. Disagree
 [-2] ☐ E. Strongly Disagree
14. In this platoon the behaviors that will get you in trouble are well known.
 [+2] ☐ A. Strongly Agree
 [+1] ☐ B. Agree
 [0] ☐ C. Borderline
 [-1] ☐ D. Disagree
 [-2] ☐ E. Strongly Disagree
15. First-termers in this platoon feel they play an important part in accomplishing the unit's mission.
 [+2] ☐ A. Strongly Agree
 [+1] ☐ B. Agree
 [0] ☐ C. Borderline
 [-1] ☐ D. Disagree
 [-2] ☐ E. Strongly Disagree
16. First-termers are proud to be members of this platoon.
 [+2] ☐ A. Strongly Agree
 [+1] ☐ B. Agree
 [0] ☐ C. Borderline
 [-1] ☐ D. Disagree
 [-2] ☐ E. Strongly Disagree
17. How satisfied are the first-termers in this platoon with the time available for family, friends and personal needs?
 [+2] ☐ A. Very Satisfied
 [+1] ☐ B. Slightly Satisfied
 [0] ☐ C. Borderline
 [-1] ☐ D. Slightly Dissatisfied
 [-2] ☐ E. Very Dissatisfied
18. How satisfied are the first-termers in this platoon with the unit social events?
 [+2] ☐ A. Very Satisfied
 [+1] ☐ B. Slightly Satisfied
 [0] ☐ C. Borderline
 [-1] ☐ D. Slightly Dissatisfied
 [-2] ☐ E. Very Dissatisfied
19. First-termers in this platoon feel they are serving their country.
 [+2] ☐ A. Strongly Agree
 [+1] ☐ B. Agree
 [0] ☐ C. Borderline
 [-1] ☐ D. Disagree
 [-2] ☐ E. Strongly Disagree
20. First-termers in this platoon have opportunities to better themselves.
 [+2] ☐ A. Strongly Agree
 [+1] ☐ B. Agree
 [0] ☐ C. Borderline
 [-1] ☐ D. Disagree
 [-2] ☐ E. Strongly Disagree

A METHODOLOGICAL ANALYSIS OF THE LINK BETWEEN COHESION AND COMBAT STRESS AND POST-TRAUMATIC STRESS SYNDROME

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The literature on neuropsychiatric or nonbattle casualties indicates that there is a direct correlation between cohesion (or morale) and the incidence and prevalence of combat stress reactions (CSR) and/or post-traumatic stress syndrome (PTSD) (Anderson and Glass, 1966; Bond, 1952; Gal, 1983, 1986a; Griffith, 1986a, 1986b; Griffith and Chopper, 1986a, 1986b; Ingraham and Manning, 1980; Marlowe, 1979; Mullins and Glass, 1973; Noy, Nardi and Solomon, 1986; Price, 1984; Shalit, 1985; Solomon, Noy and Bar-On, 1986; Shaw, 1983; Solomon, Mikulincer and Hobfall, 1986; Steiner and Neumann, 1978; Tiffany, 1967).

There is a large body of sociological and psychological research which indicates that human factors such as cohesion, trust in peers, trust in leaders, unit climate, teamwork and competence are extremely important elements in determining why men fight in combat or run away or suffer some form of combat stress reaction (Stewart, 1987). Morale, or esprit or will-to-fight are often used as interchangeable terms with the word "cohesion". Units with high cohesion have high morale and, correspondingly, high degrees of combat effectiveness (Gal, 1985, 1986a; Henderson, 1979, 1985; Kellett, 1982; Little & Janowitz, 1964; Marshall, 1947; Moskos, 1970, 1983; Sarkesian, 1980; Shils & Janowitz, 1948; Stouffer et al, 1949).

Military cohesion is a special bonding which implies that men are willing to die for the preservation of the group or the code of honor of the group or the immediate accomplishment of the military mission or the valor and honor of the country.

An in-depth review of the literature (Stewart 1987) and recent U.S. Army Research Institute research (Siebold 1987a, 1987b; Siebold & Kelly, 1987a, 1987b) show that military cohesion consists of four major elements: 1) relationships between peers (horizontal); 2) relationships between subordinates and superiors (vertical); 3) relationship to the military as an organization or unit (organizational); 4) relationship to the nation or society (societal or cultural).

But there is a marked discrepancy between the research performed by military sociologists and psychologists versus the studies reported in the medical (psychiatric) and clinical psychological journals. Solomon, Mikulincer, and Hobfall (1986) regard the study of troop cohesion and breakdown as "more folklore than scientific fact."

Stewart and Weaver (1987) performed an in-depth analysis of studies which relate several variables, including cohesion (morale), with combat stress reactions or the onset of post-traumatic stress syndrome. Of the 49 studies which fit the criteria for analysis, only seven were judged methodologically and statistically sound. Twenty percent of the studies did not report the sample size; 14% were case studies of one to ten subjects; 22% had eleven to

fifty subjects. An appalling 39 of the 49 research studies had no control group.

The majority of studies in the area of CSR and PTSD suffer from statistical and methodological improprieties which detract from, or completely obviate, any conclusions that can be drawn from these research reports. Findings of one group of studies often challenge and refute the conclusions of other research. While many of these studies may have face validity or point the clinician to avenues of further investigation, their results are so divergent as to confuse both clinician and statistician.

Stewart and Weaver (1987) conclude that researchers in the area of CSR and PTSD and all those who concern themselves with the issue of neuropsychiatric casualties should design their research as follows: use of comparable control groups, large and representative samples, extensive statistical analysis of data and explicit definitions of variables.

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SMALL-UNIT LEADERSHIP AND SOLDIER COMMITMENT

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This study presents a model of soldier commitment, incorporating dimensions of both affection and mutual exchange of services between the soldier and specific referent groups in the Army. This model is believed to describe the most fundamental psychological characteristic that "binds" the soldier to the military group. Small-unit leadership is depicted as the primary mechanism that enhances soldier commitment. Persistent individual and unit problems are factors that undermine the trust and confidence soldiers have in their leaders and the Army in general, and thereby reduce the soldier's commitment to the military group and the Army.

OBJECTIVES

The paper reports a model of soldier commitment interview data collected from United States Army personnel assigned to Army units throughout the continental United States. The purpose of the group interviews was to examine factors associated with retention and attrition and their hypothesized interrelationships. The focus of this examination was on the individual soldier's perceptions and attitudes and their influence on his(her) decision to stay in or leave the army.

METHOD

In four of the five continental Army headquarters, three separate group interviews were conducted. Each group consisted of either company grade officers, NCOs, or lower-ranking enlisted soldiers. Six to ten participants comprised each group. Groups included a mixture of minorities, women, and representatives of different types of units. These sessions lasted 1-and-1/2 hours and were tape-recorded to facilitate subsequent analysis. A review of literature pertinent to organizational commitment, cohesion, and leadership yielded topic areas to be discussed during the group interviews, and a list of topics was prepared to follow during the group interviews to ensure adequate coverage of the topic areas of interest. Preliminary data collection was guided by the principle that the soldier's experience of unit activities is mediated by individual demographics, previous military, and previous civilian history, and thereby pertain directly to experience in the military unit and the individual commitment of the soldier to the primary and secondary referent groups found in the unit.

A MODEL OF SOLDIER COMMITMENT

The end result of this study was a model incorporating individual and group factors affecting the soldier's "will to commit" to the military group. The model of soldier commitment includes both affective and instrumental commitment at the primary (e.g. squad, company) and at secondary group levels (e.g. battalion, regiment, the Army). Such a typology is useful in specifying both the referent group and type of commitment for important concepts found in the social science and military literatures, such as "horizontal" and "vertical" cohesion, occupational and institutional orientations, and so on. The model also depicts small-unit leadership, called "linking pins" between lower-ranking enlisted personnel and the organizational hierarchy, as the primary means whereby individual commitment is enhanced or decreased. For example, many problems in the unit undermine the confidence and trust the individual soldier has in his immediate leaders and the Army "system" in general, resulting in dissatisfaction, lower levels of commitment, and the desire to leave the unit and the Army. Small unit leadership is, then, integral to soldier commitment.

HOW TO DEVELOP OPTIMAL FIGHTING FORCES:
10 PRINCIPLES TO OPTIMIZE "HUMAN READINESS FOR COMBAT"

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The concept which is critical to the development of an optimally ready fighting force is called the "human readiness for combat". The five basic components of a fighting soldier are described in Table 1 in terms of optimization goals for an individual soldier. A theoretical model for military unit for the concept of the "human readiness for combat" distinguishes among three basic variables (Figure 1) individual's mental readiness for combat (his own assessment versus others' assessment of each person), the unit's readiness for combat (his mental readiness versus performance readiness), and his actual performance during combat. The unit's mental readiness for combat can be divided into social climate variables (Moos, 1973, 1974, 1975; Mac Donough and Blankinship, 1985; Solomon, Mikulincer, and Hobfoll, 1986) and soldiers' evaluations of combat readiness (Gal, 1984; Mac Donough and Blankinship, 1985). The importance of the concept of "human readiness for combat" is that it can be used to study and improve the training, management, leading, and research with soldiers in peacetime as well as combat.

In order to optimize fighting forces, the author identified ten principles, four principles based on the author's clinical and research experience as a clinical psychologist for 15 years in the Army and six principles based on the views of 30 combat veterans who served more than 50 years in Vietnam.

FOUR OPTIMIZATION PRINCIPLES BASED ON 15 YEARS OF CLINICAL AND RESEARCH EXPERIENCE

1. Know the five basic components of a soldier's personality (Table 1) cognitions, emotions, behaviors, physical state, and spiritual state. Then,
 - a. Maximize the effects of the combat mental multipliers.
 - b. Minimize the effects of the combat mental detractors.
 - c. If a soldier must function in a sleep-deprived state, then teach him to use some of the 24 coping skills to counteract the detrimental effects of the deprivation of sleep (DEDS).
2. Know when to intervene to "treat" a soldier by reducing unnecessary stresses, helping him cope with unavoidable stresses, or by using the 12 revised principles of combat psychiatry to "treat" him.
 - a. There are five basic principles of stress management and reduction.
 - b. There are 18 basic methods to reduce stress that are the basic modalities found in civilian and military stress manuals.

c. In addition to the 10 "classic" principles of combat psychiatry, soldiers may benefit from catharsis at various levels and confrontation (combined with varying levels of empathy) (Mac Donough, Zepecki, and Norwood, 1987).

3. Know a functional classification of soldiers (such as Malone's [1983] four categories of soldiers: able & willing, usable but willing, able but unwilling, and unable & unwilling), the respective types of leadership strategies (coach, teacher, father, and warden), and the four basic soldier values (competence, candor, courage, and commitment to peers).
4. Emphasize the development of three fundamental social climate variables; recognizing talents, running a well organized company, and developing pride. They may represent a necessary core for understanding soldiers' evaluations of combat readiness. Using the research terminology in a study of 585 soldiers in 10 armor companies prior to their deployment to NTC (Mac Donough and Blankinship, 1985) the following conclusions were reached:

Assuming the three conditions are present, and Officer Support increases, then one would expect improved Cohesion, Training, & Trust. If the three conditions are present and Peer Cohesion increases, then one would expect improvement in Willing, Able, & Ready for Combat. If the three conditions are present and Clarity increases, then one would expect improvement in Confidence in Tactical Decisions of Leaders. (p.12)

SIX OPTIMIZATION PRINCIPLES BASED ON 30 COMBAT VETERANS' EXPERIENCES IN MORE THAN 50 YEARS IN COMBAT ZONES (IN VIETNAM)

Principles were also derived from combat veterans who were generally satisfied with their level of performances in combat in Vietnam but who later had psychological problems due to current stresses or post-traumatic stress disorders. This paper summarizes the views of one sample of 30 enlisted combat veterans in order to identify the fundamental psychological processes necessary to develop optimal fighting forces. The combat veterans studied are a clinical sample of treated combat veterans with and without PTSD who were on active duty.

Several assumptions were made before conducting this analysis of combat veterans. First, it was assumed that all combat veterans who survived war (Vietnam) have meaningful insights into what helped them to survive in war. Thus, the views of all of the combat veterans were considered valuable. Combat veterans in treatment for PTSD obviously had psychological problems due to unresolved war-related experiences, but this does not mean that their comments about what helped them and their units to survive in Vietnam were not valid. Second, it was assumed that there are basic principles in organizing combat units to be optimally effective in combat. By studying different samples of combat veterans, one might identify the same basic principles. Different types of combat conditions (Vietnam jungles versus desert warfare) might require different types of tactics from a military leadership point of view; however, the same basic principles of leadership and social organization would apply to both situations. That is the focus of this paper - to identify those basic psychological processes.

The clinical sample consisted of 30 combat veterans who sought or needed treatment due to PTSD and/or current stress reactions. The 30 combat veterans served more than 50 years in Vietnam. Six optimization principles were developed based on the author's clinical experiences with the combat veterans and written essays by them.

DESCRIPTION OF AN OPTIMAL FIGHTING FORCE

The 30 combat veterans who served in Vietnam for a total of more than 50 years described an ideal fighting unit as follows. Soldiers want to fight and will fight under extreme combat stresses for each other and leaders who build units that respect each soldier, build mutual trust among the enlisted soldiers and with officers, and practice good leadership techniques that include use of common sense (over manual citations), treat all soldiers fairly, set realistic expectations, and use a fair promotion system. A good leader must do these four things:

- a. Be technically able to accomplish the missions (technically proficient).
- b. Care about the welfare of his soldiers by demonstrating he meets their daily needs, doesn't waste their lives unnecessarily, and does not "dixie cup" them (i.e., transfer nor discharge them spuriously).
- c. He does not place his own welfare above his subordinates, i.e., "he watches out for them and they take care of him".
- d. He works closely as a team member with subordinates particularly if they have more combat experience, so that he becomes "combat-wise."

From these social processes, a "cohesive military team" develops with a sense of being a family which wins or loses in combat. "Family members" are willing to live and die for each other. The team is goal-oriented in accomplishing its missions and is feeling-oriented in caring for each other with respect for each individual. The more each soldier can believe in the cause of the war, the more motivated he is to fight. If the higher chain of command supports the commander in operating such a unit, the unit can continue to thrive.

So, the critical cognitive components to build optimal fighting units are soldiers "believe in each other," "believe in the leadership," "believe in the cause of the war," and "believe each needs to optimally fight." Based on his cognitive and emotional state, he is able and does react optimally in a physical state ready to fight with a commitment to win (Table 1). These variables are diagrammed in Figure 2 in terms of the 10 principles that can be used to design an optimal fighting force. The six additional principles derived from the clinical experiences and written essays by the combat veterans follow.

OPTIMIZATION PRINCIPLES

5. Follow the "Combat Golden Rule": in issuing orders "don't demand anything that you wouldn't do yourself."

6. In receiving orders, a good leader has the courage to say "no" to blatantly ineffective orders that may lead to unnecessary deaths by presenting better alternatives to reduce the likelihood of deaths.
7. In caring for the welfare of your soldiers, "know them better than you know yourself." Good leaders treat each soldier as a "gold nugget," i.e., each soldier is valuable. "Good leaders save troops' lives and do not unnecessarily sacrifice them." This is the opposite of the "dixie cup" style of leadership, which spuriously "trashes" expendable soldiers.
 - a. A sincere leader is willing to take advice from a subordinate, especially if he is combat-experienced.
 - b. An effective leader delegates authority to his NCOs and lets them do their jobs.
8. The combat lessons learned from the past are still valid. Although tactics and strategies do change depending on the location (jungle vs. desert) and type (nuclear, conventional, or guerilla warfare, the same basic principles of leadership and social organization apply to all combat situations.
 - a. Actively involve combat veterans in all stages of combat-oriented training.
 - b. Make the combat training as realistic as possible.
 - c. Leaders need to provide the latitude and freedom for subordinates to fail in training so a priority is not given to the "image of success" and demands of perfect (error-free) mission accomplishment.
9. The first to die in combat are "the slow" (both physically and intellectually), "the uninformed" (unfortunately), "the stupid" (who do not use common sense), and those who "broadcast" their leadership roles. From a tactical point of view, the types who die first are the radio operators, machine gunners, pointmen, and medics in infantry units.
10. Troops can fear poor leaders in peacetime but fail to follow or support them in combat. "Poor leaders are tolerated, but bad leaders who could get others killed unnecessarily are not tolerated, and there are limited attempts to change them." Soldiers throughout history have actively minimized the effects of callous leaders who are likely to unnecessarily get others killed. "Books don't make a war, a war makes the books"; so, leaders need to use common sense derived from combat experience and not rely upon "book knowledge".

NOTE: THE MOST BASIC EQUATION FOR COMBAT STILL IS (Malone, 1983, p. 90):

$$\text{SKILL} \times \text{WILL} \times \text{DRILL} = \text{KILL}$$

DETERIORATION OF A "COHESIVE MILITARY TEAM/FAMILY"

If these 10 principles specify the "basic building blocks" for an optimal fighting force, then the "blueprint" for deterioration of a military unit can be derived as diagrammed in Figure 3. The 30 enlisted combat veterans identified the most critical variable to deteriorate a "cohesive military team/family" as officers who were self-centered and cared primarily about their own welfare. This led to the breakdown of mutual trust between the officers and enlisted personnel which interfered with efficient teamwork and started the social deterioration of the unit.

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Table 1

HOW TO OPTIMIZE A SOLDIER'S READINESS FOR COMBAT:

ANALYSIS OF COMBAT DETRACTORS AND COMBAT MULTIPLIERS

ANALYSIS OF PERSONALITY:

5 RESPONSE SYSTEMS COMBAT MENTAL DETRACTORS COMBAT MENTAL MULTIPLIERS

| | | |
|---|--|---|
| HOW DOES HE REACT (BEHAVE) OPTIMALLY? | slow to react doesn't know job loner in a negative social climate | quick to react knows job team member in a positive social climate |
| HOW DOES HE THINK OPTIMALLY? | mentally weak doesn't know his limits | mentally tough but know his mental limits |
| HOW DOES HE FEEL OPTIMALLY? | emotionally weak -can't cope with cold & heat -can't cope with pains has "emotional polio" & doesn't understand feelings | emotionally tough -endures cold & heat -endures pains manages feelings to: -solve social conflicts -help team members |
| HOW DOES HE REACT PHYSICALLY? | sleep deprived doesn't know his "stress signature" (signs that compose his stress reaction) | rested and ready to fight knows his "stress signature" (bodily responses when excessively stressed) |
| HOW DOES HE SPIRITUALLY FUNCTION? | he doesn't care about the mission or troops | he cares about the mission or the troops He is totally <u>committed to</u> <u>win</u> |

STRESS MANAGEMENT IN THE CANADIAN FORCES

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Until recently the study of human stress in the Canadian Forces (CF) has been restricted to a few stress management workshops provided to a few units on an ad hoc basis. A standardized approach, however, was not available leaving the development and delivery of these workshops to those specialist officers who had sufficient interest, skill and time.

Although a fully coordinated approach to stress management has been slow, specialist branches within the CF such as Personnel Selection (Behavioural Science Specialists), Medical and Social Work have been to varying degrees, working on the development of stress management programs. The following list provides examples of some of the stress related initiatives in the CF. Note: List is not meant to be exhaustive.

A. SUPERVISOR'S GUIDE TO STRESS is an information guide for supervisors that explains what stress is, how to identify stress reactions in self and others, and where to refer. The manual was recently developed by a senior Personnel Selection Officer (PSEL) and is in the final stages of approval by National Defence HQ (NDHQ).

B. NDHQ STRESS COMMITTEE is a multi-discipline group of NDHQ personnel chaired by a senior medical officer who exchange and distribute information on all aspects of human stress from combat to family.

C. SECOND CAREER ASSISTANCE NETWORK (SCAN) is designed to assist military personnel within five years of termination of service or those who are receiving a medical release, in the planning, preparation and entry into a meaningful second career in civilian life. The SCAN program encompasses counseling, preparation such as assistance with resumes, placement and follow-up. The program is administered by the PSEL Branch.

D. RESEARCH

(1) MOTIVATION OF CF SOLDIERS IN EUROPE. The CF has commenced an evaluation of the elements of operational readiness. In support of that evaluation the assessment group has requested a study of the human element in operational readiness which will focus on the motivation and attitudes of CF soldiers in Europe towards the combat mission in Europe. The Canadian Forces Personnel Applied Research Unit, Toronto (CFPARU) has been tasked with this project.

(2) EVALUATION OF THE COMBAT STRESS PROGRAM. This research project forms an important part of the Army Stress Study. Once the army determines the training program that will be introduced to enhance the development of effective human performance in battle, it will be CFPARU's task to evaluate the program. DCIEM: experiments are being conducted to determine the physiological and psychological effects of sleep deprivation.

E. STRESS MANAGEMENT WORKSHOPS. As indicated in my introduction, stress management workshops are given to a few units by specialist officers. Interest is growing, however, and the demand for these workshops is increasing.

F. PSYCHOLOGICAL TRAINING FOR TANK CREWS. The Canadian Army Trophy (CAT) is a prestigious NATO tank gunnery competition. In CAT 85, competing Canadian tank troops came last out of five national teams. Even though the competition is in large part equipment oriented, the importance of the "HUMAN ELEMENT" was recognized: a study, conducted by the PSEL Branch, determined that psychological training for Canadian tank crews was both feasible and practical. Canada adapted methods/techniques used in sports psychology to prepare tank crews for competition, and civilian sports psychologists were contracted to develop and deliver a psychological training program. The program drew from their successful experiences with Canadian Olympic athletes and included relaxation, imagery, visualization, and focusing. Among Leopard I competitors in CAT 87, Canadian troops placed first and third and, when counting those troops equipped with more advanced tanks, Canada finished a very respectable sixth and thirteenth (out of 24 troops) overall, helping CENTAG to win the competition. Many changes and improvements contributed to Canada's improved performance in CAT 87. The psychological training program was just one of them, but the results are encouraging and this type of training will likely continue to be developed and refined for CAT Bg.

G. ARMY COMBAT STRESS STUDY. I will focus the remainder of my briefing on the latter of these initiatives which is the project for which I am primarily involved.

PROJECT BACKGROUND

Research conducted by the Canadian Army, CFPARU and Allied and friendly force armies, has concluded that combat stress reduces manpower in battle sufficiently enough to warrant dedicated training and/or treatment programs.

The Canadian army has no dedicated program that addresses combat stress. Therefore, in Jan 87, in response to a corrective proposal by Army PSEL officers, Army HQ directed a study that would investigate the requirement for combat stress management training in the Canadian army, and if deemed feasible, to develop a training doctrine and program.

PROJECT

For ease of management, the project was divided into six phases and a study team was stuck. The composition of the team has representatives from the combat arms, the Medical branch, and the PSEL branch; i.e., medical to address the physical needs of the soldier, PSEL to advise on psychological and sociological factors, and operators to provide field experience and executive direction.

The following briefly describes the project phases and highlights the key findings of the study to date:

PHASE I involved two current activities:

A. A review of the literature on combat stress management techniques conducted by CFPARU, identified that the armies of the US, Britain and Israel were actively working in this area of concern.

B. At the same time seven senior PSEL officers with army experience under the guidance of the Chief Psychologist for the CF (DPSRSC) developed a plan and training workshop that provided systematic guidelines for PSEL participation in a major army exercise (RV 87) as observers.

PHASE II involved the participation of nine PSEL officers as observers during RV 87 to both experience army field operations and to gather information on exercise and real combat stress. Information was gathered through PSEL observation of unit and soldier activity, PSEL interviews with soldiers and leaders, and a stress questionnaire.

PHASES I and II have been completed and a comprehensive report has been prepared. A copy of the report is available from the author.

FINDINGS

To summarize the findings of the first two phases, the vast amount of literature reviewed, both current and historical, results of the RV 87 experience, and data collected during RV 87, indicate clearly that although Canadian soldiers to varying degrees have a marginal understanding of combat stress (i.e., they know what it is and some of the indirect contributors to combat stress), they do not know how to cope with it. In essence, the results confirmed the requirement for further study into methods that would improve human performance in real operations.

The questionnaire was given to 372 RV 87 personnel from Private to Major in 7 units. Participants represented CA, CS and specialist occupations. In summary, as indicated earlier, the results show that the respondents understand what combat stress is, that they are concerned about the effects of combat stress, view combat stress as a negative condition, and don't know how to cope. The results of the questionnaire are contained in a CFPARU Technical Note which is available through the author.

Since the literature review had identified several countries whose armies had developed or were in the process of developing combat stress training and/or treatment programs, Army HQ directed the study team to visit these countries during the formative stages of Phase Three. These visits were to provide for face-to-face discussion with personnel directly involved in the development and application of stress related programs, determine the programs applicability to Canadian Army requirements, and establish points-of-contact and information sharing networks.

The US Army (WRAIR and AHS), British Army (Director of Army Psychiatry and Army Personnel Research Establishment), and Israeli Army (IDF and IIMS) were selected as the most appropriate locations i.e., the countries currently most active in the area of combat stress as revealed in the literature and through personal contacts. As well, Cyprus was selected as a location for observing and discussing stress associated with peacekeeping operations such as family separations, working in a foreign environment, close contact with opposing forces, loneliness, and boredom.

The visits have concluded and the team has accumulated a vast amount of material (including videos and lesson plans) on stress related issues including stress management, combat stress management, suicide and alcohol prevention, spouse and child abuse etc., that must now be refined into a body of material relevant to the Canadian Army.

Phases IV, V and VI will respectively involve staffing of a doctrine and training package, implementation of the training program, and finally, program evaluation.

CONCLUSION

From the literature reviews, RV 87 experience, and visits we have determined the need for a program that will enhance the performance of soldiers in battle and which will as well minimize the negative effects of combat stress.

COMBAT STRESS REACTION CASUALTY MANAGEMENT:
CANADIAN PERSONNEL CONSERVATION EXPERIENCE IN A THEATRE OF WAR

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During the course of the Second World War the Canadian Army Overseas experienced in excess of 10,000 neuropsychiatric battle casualties. The equivalent of a full Division of men were treated for what is now called the Combat Stress Reaction. This was an enormous drain on the personnel resources of this Force and extraordinary measures were adopted to compensate. This study briefly investigates some of those measures as they pertain to the Canadian experience in the handling of neuropsychiatric casualties.

A number of factors prompted the investigation. First, Canadians in recent years have not looked to their own past experience in developing systems for the handling of neuropsychiatric or combat stress casualties. Second, there is a need to view the handling of such casualties in a broader context than treatment alone. Rather, they should be considered in terms of the entire problem of personnel conservation in a theatre of war. Finally, in a number of respects, the Canadian personnel conservation system was unique, and an evaluation in the light of more recent experience should prove useful.

The unique features of the Canadian neuropsychiatric casualty management system were rooted in early recognition of the necessity of stringent personnel conservation measures. Canadians knew that they faced particularly severe problems in maintaining a large army overseas given their relatively small population base. With a population of less than 14 million, they fielded an Army of five divisions plus Army and Corps headquarters. The pressure of reinforcing this Army was felt early and became serious during the latter stages of the war. A conservation oriented approach to manpower utilization was developed following deployment to England. This approach, which was refined during the Italian Campaign, was to mark the Canadian effort for the remainder of the war.

They were a small force in Italy with long lines of communication and uncertain reinforcements. It became necessary for them to generate a reinforcement stream from within their own rear area resources. Two general principles directed their manpower policy. "On the one hand it was necessary that the numbers of men evacuated from the theatre be reduced to a minimum, while, on the other hand, every man must be effectively employed." (Carver, 1945) As this policy evolved, only men with very serious disabilities were evacuated from the theatre. All others with less severe disabilities were assigned or re-allocated to duties they were capable of performing in the rear and along the lines of communication. This process was controlled in such a way that the employment of these casualties would release more able bodied men for service with forward or combat units. The re-allocation system was conducted by psychologically trained army officers (Selection of Personnel Officers, S.P.O.'s) working in conjunction with medical officers, psychiatrists and commanders. With variations, this system proved effective enough to be adopted by all Canadian Forces for the remainder of the war.

This attempt at systematic personnel conservation was severely tested when neuropsychiatric casualties were experienced. Although the concept of forward treatment of these casualties was in effect, there were, nevertheless, large numbers who were evacuated to rear area hospital facilities and released to holding units. The chief psychiatrist of the rear base hospital facility noted in his report that 92% of the cases he examined during one battle had come through a forward area psychiatrist. They had been thoroughly screened and thus constituted only the severe cases. He further observed that:

The salvage rate for this group has been, therefore, almost nil. These cases are regarded by officers as 'bona fide psychiatric' cases, and in the minds of most combat officers constitute the entire psychiatric problem. Combat officers were most anxious to get these cases out of their unit as quickly as possible and by whatever method (especially when the case is one which they have already made one or more attempts at rehabilitation in the unit). The salvage in this type of case lies in the unit, and in forward neuropsychiatric installations." (Doyle, 1945a, p.8)

These casualties, and in particular their method of disposal, were viewed as a tremendous waste of valuable manpower. The Canadian Army psychiatrists were moved to observe that "practically all of the neuropsychiatric casualties who were evacuated were in our opinion fit for non-combat duties, but in the meantime they had piled up in holding units and were deteriorating in a life of idleness." (Doyle, 1945a)

It was obvious that these casualties could not all be effectively absorbed by rear area units, at least not immediately. It was known that they would deteriorate if left in holding units. They were, however, too valuable a source of manpower to be evacuated. The solution, which was unique to the Canadians, was the creation of Special Employment Companies (S.E.C.'s). These companies were initially called pioneer companies after similar organizations which had been created in England to meet the requirements for untrained manpower in support functions such as Forestry, Engineering, Supply and Ordnance. Whereas, in England these Pioneer companies were made up of personnel who were judged mentally deficient, illiterate or in some respect, untrainable, (large numbers of men in these categories were inadvertently enrolled in the Army during the explosive mobilization years of 1939 and 1940, prior to the institution of recruit mental testing and screening), in Italy they were composed of men who were deemed by Army Psychiatrists to be beyond the benefits of forward treatment and return to their units. In many of these cases re-employment had already been tried. The pioneer companies provided the opportunity to remove even those diagnosed as chronic psychiatric cases from the medical stream.

The use of these Pioneer Companies, or Special Employment Companies (S.E.C.'s) as they were later known, was in a number of ways an extension of both the treatment principles and personnel conservation principles practiced by the Canadians. An underlying principal of treatment at any stage was to keep the men in uniform, with weapons, and employed as soldiers at useful work. Those with whom forward treatment failed could nevertheless expect Theatre employment as far forward as necessity required. The principles of conservation dictated that these men should be employed in such a way as to either replace potential combat manpower in rear area units, or at the very least, make a significant contribution to their Corps fighting efficiency. This system was felt to be both psychologically and strategically sound.

The performance of these Pioneer or Special Employment Companies exceeded all expectations. Their superb contribution to their Corps was a significant feature of all reports concerning them. One observer, after being with an S.E.C. while they were transporting ammunition noted that, "While the Army expects common labour to move 6 tons per day, members of these special employment companies in Italy moved 21-1/2 tons per man per day." (Carver, 1945) Their performance was best when they were supporting their own troops. Speculation at that time and afterward was advanced regarding the reasons for this. The most popular theory was that the men, "were enabled to regain some self confidence and compensate some of their sense of guilt by doing work obviously of immediate value to the friends they had left in action with operational units." (Carver, 1945)

It must be emphasized that these units were not created to routinely employ neuropsychiatric or CSR casualties. The principles of CSR management employed by the Canadians in Italy did not differ from those advocated today. Expectancy, Immediacy, Proximity and Simplicity may not have been stated in those exact terms but they formed a part of the education of medical officers in that theatre. In practical terms they were in effect to the extent that the limits of unit education and the tactical situation would permit. The following examples from the reports of field psychiatrists underscores the fact that all possible was being done at that time to treat soldiers forward and either retain them in their units or return them rapidly.

Considerable psychological damage is done when a man is evacuated for psychiatric reasons which are not grave, and this damage is proportionately increased the further back toward base he is evacuated." (Gould, 1944)

It is by now axiomatic that the further back from the front line a psychiatric casualty is evacuated the smaller the chance of his being rehabilitated, with consequent loss of manpower "His main goal [the psychiatrist] is the prevention of psychiatric casualties in battle, to encourage R.M.O.'s to treat and retain in the unit the less severe cases and to evacuate only those individuals who are obviously ineffective in action and a menace to the unit." (Moll, 1944)

Very simple treatment only, not prolonged more than four days should be carried out. The chief job of the psychiatrist here is the selection of favorable cases who will recover quickly with rest, sedation, safety, and reassurance. (Doyle, 1945a)

It is my opinion that in the theatre of war, the details of therapy matter little so long as the work is done by experienced people and the following principles are observed.

The psychiatric battle casualty requires

- (a) A sense of security - obtained with or without drugs.
- (b) Rest - from 16 to 20 hours per day for 2 to 4 days.
- (c) In winter, dry clothing and warmth.
- (d) Good food, hot sweetened drinks and plenty of them.
- (e) Psychotherapy:
 - (i) If drugs are necessary to relax nervous tension and permit the patient to fully discuss his problems, whether the term abreaction be used in his case or not.
 - (ii) Explanation of symptoms and reassurance." (Van Nostrand, 1944a)

There is no doubt that the Canadians understood the deleterious effects of treating these casualties in hospitals and that they did all they could to prevent this. In the view of the military psychiatrists the casualties which had filtered to the rear were chronic and of little use to fighting units.

Army Psychologists (S.P.O.'s) were either attached to these Special Employment Companies (S.E.C.'s) or visited them from Reallocation Centers. Their task was to assist in rehabilitation and, in conjunction with medical officers, reassign those deemed sufficiently recovered to forward units. Although reallocation to units along the lines of communication was usually possible they were singularly unsuccessful in generating reinforcements for the fighting units from these companies. Despite hard, useful work in supportive groups, a return of confidence and some measure of self esteem, very few of these men were judged to be fit for such service. The S.P.O.'s never reported more than 5% of these men re-assignable to Infantry. The term chronic instability was a feature of all reports. It was estimated by Army Psychiatrists that over 80% of those men whom had not responded to forward treatment and were assigned to rear S.E.C.'s were considered chronic in the sense that they had been suffering from some form of psychiatric disorder prior to military service. (Doyle, 1945a)

Employment in these units did, apparently, have at least a partial rehabilitative effect. One S.P.O. noted in his report that

It has already been clearly demonstrated that the Canadian Pioneer Companies have restored the self confidence of these men and given them at least the self assurance necessary in order to return to civilian life at their former level....They have been shown that they can do a job which is helping the soldier in the front line, they are working hard physically, and they are contented with the knowledge that they are doing work which has a purpose. (Clarke, 1944)

The implication that such employment may prevent or alleviate what is now called "Post Traumatic Stress Disorder" makes sense in the light of current knowledge.

A summary and discussion of the statistics concerning Canadian neuropsychiatric casualties and their disposition provides a useful measure for comparisons and some insight into the effect of the use of S.E.C.'s. The figures for the Italian campaign have been selected. It was during this 17 month long series of battles that the Canadian system evolved.

The total number of neuropsychiatric casualties experienced by the Canadian Army in Italy was reported by Doyle (1945a) to be 5020. Of these, 3362 were seen by a psychiatric unit operating forward of the Corps administrative area. Two separate periods, each containing two severe battles which involved the 1st Canadian Division, were recorded in detail. The number of casualties and the neuropsychiatric casualty ratio of the 1st Division are considered to be representative of the periods of active engagement during this campaign. The following table presents the percentage of neuropsychiatric casualties in relation to total battle casualties for these two periods.

| Neuropsychiatric Ratio, 1 Canadian Division in Italy | | | | | | |
|--|--------------------------|------------|--------|-------|-----------|--|
| Period | Battles | Battle Cas | NP Cas | Total | NP Ratio* | |
| 28 Nov 12 Feb 1944 | Moro & Ortona | 1871 | 570 | 2441 | 23.3 | |
| 25 May - 17 Jun 1944 | Gustav & Hitler Lines | 1231 | 369 | 1600 | 23.1 | |

*This ratio differs slightly from Doyle's (1945a) report of 22.8 and 22.6 respectively. A recalculation of the author's figures was conducted.

These neuropsychiatric ratios are comparable to the ratio experienced by the Allied Armies during the European War and with more recent estimates reported by Belenky (1982) from the Israeli experience during the war in Lebanon.

Records of the disposition of the casualties are not readily available in compiled form. It is possible, nevertheless, to reconstruct the general trends of casualty disposition during this campaign. In June of 1944, Doyle reported the disposition of Canadian casualties from the major battles of the Gustav and Hitler line as

| | | |
|----------------------------|-----|-------|
| Returned to Unit | 111 | 18.7% |
| Special Employment Company | 266 | 44.7% |
| Evacuated & Reallocation | 218 | 36.6% |

This period marked the first major use of the S.E.C.'s as rehabilitative units to which casualties could be sent directly after a brief period of diagnosis and treatment. Doyle reported that 86% of the group sent to the S.E.C. were chronic. Doyle commented on the low percentage returned to their unit as follows:

In previous reports those returned to unit have usually been 25 - 30%. During the period covered by this report, however, the Neuropsychiatric centre was in Corps administration level instead of at Division level, and in addition, field medical units and regimental M.O.'s had been urged to be very strict and to hold all NP cases until they were certain that they could not be returned to their units. As a result, the NP centre received a much smaller number of mild cases and the percentages of casualties returned to duty from the NP centre was thereby reduced. (Doyle, 1944)

Later, following the battle of the Gothic line, Moll, (1944) reported the following casualty dispositions for the period 25 May to Sept 1944.

| | | |
|----------------------------|-----|-------|
| Returned to Unit | 150 | 42.0% |
| Special Employment Company | 163 | 46.5% |
| Evacuation & Reallocation | 46 | 11.5% |

This distribution of neuropsychiatric casualties was to be the norm until November 1944. From that time until the Canadian troops were re-deployed with the 1st Canadian Army in North West Europe, the percentage of casualties returned to their unit declined markedly. In his report of this period Moll (1945) indicated that the decline was due to

- a. improved screening at the units;
- b. increased total stress; and
- c. returning casualties to their unit was not warranted at that stage of the campaign.

Further personnel conservation measures were introduced in the spring of 1945. At that time over 1000 Canadian soldiers were serving sentences in military prisons and detention barracks in Italy. Teams of psychiatrists and Selection of Personnel Officers surveyed all military personnel under sentence in the theatre with the aim of returning as many as possible to fighting units. This was a practice which had first been introduced in England in 1942 and was repeated whenever circumstances would allow it. The survey teams confined their examination to soldiers serving sentences longer than three months. In all, 660 prisoners were interviewed and classified as follows:

| | | |
|---------------------------|-----|-----|
| Reclaimable for Combat | 247 | 38% |
| Neuropsychiatric Disorder | 232 | 35% |
| Unfit for Service | 181 | 27% |

(From Doyle, 1945)

There was considerable evidence that many of the Neuropsychiatric Disorder group had shown signs of Combat Stress Reactions within their unit prior to the incident which precipitated their charge and sentence. In this regard the chief psychiatrist was moved to record:

Too many prisoners suffering from neuropsychiatric conditions appear to be convicted and sent to prison. The incidence of psychiatric cases will never be affected very greatly by disciplinary measures alone, and when an obvious psychiatric case is harshly dealt with, it is bad for the morale of other troops who are usually perfectly aware of the circumstances."
(Doyle, 1945b)

Suspension of sentences was granted for most reclaimable personnel.

The picture that emerges is that the Canadian Army in Italy experienced a CSR casualty rate similar to that of their allies and of other units engaged in severe prolonged action. They were able to effectively employ between 65 to 89% of these casualties in theatre. The eventual norm for effective employment was probably 85% overall. A large number of these casualties, however, were employed in Special Employment Companies. The majority of those so employed were categorized as severe or chronic and of no practical use to fighting units.

A major question arises from this study of the Canadian experience: Was the use of the Special Employment Company concept realistic and the most efficient use of manpower? Relatedly, should this system or an updated version be included in present plans?

It is apparent (with the benefit of hindsight) that the Canadians made a number of mistakes. The follow-up reports of those involved invariably recommend modifications which, if implemented, would have returned a larger number of casualties to their units. Nevertheless, all accounts make it abundantly clear that there were a significant number of C.S.R. casualties that were not employable in combat units under any circumstances. They were, in the psychiatrists' terms, chronic cases who had manifested psychiatric problems at some time in the past. By way of illustrating the nature of some of these individuals a significant number came from non-combatant units and from holding units before they were committed to action. In the eyes of the psychiatrist they were no different than civilian psychiatric cases. There is no doubt that any rapid expansion of the Army will see the return of a similar situation. The mobilization of the Korean war almost exactly duplicated the personnel

problems of the early part of the Second World War. It took 2 to 3 years to weed out the problem cases and many found their way to Korea. Among the troops now committed to our NATO obligation there are a number who will not be employable as front line infantry. How will these casualties be handled?

Recent experience in shorter wars suggests that most (between 70 to 85%) soldiers suffering from combat stress reactions were returned to their units (Belenky, 1982). These are persistent reports, however, caution in the interpretation of such battlefield generated statistics is necessary. Many factors extant within formations and individual units engaged in combat make it difficult, if not impossible, to depict the effective re-employment rate of soldiers. Canadian reports are replete with descriptions of combat stressed soldiers wandering between their company, the Regimental Aid Post and rear echelon positions during severe battles. In some cases soldiers who were returned to units could not cope with direct combat and were employed at kitchen or other duties. To a certain extent the cohesive Canadian Regimental system had the flexibility to retain and employ individuals with disabilities, even in combat, but there are limits. Reported statistics do not always convey the circumstances under which they were generated. An example of this is the documented case of a British Exhaustion Unit in North Africa which reported a return of 98% of neuropsychiatric casualties to their units. An intrigued Canadian contingent visited the unit and discovered that the facility was small, there were no evacuation procedures possible and it was impossible to determine the final disposition of the casualties after they were discharged. (Van Nostrand, 1944). In a review of war psychiatry a prominent Canadian Military Psychiatrist commented on the use of statistics and observed that:

Facts which the figures fail to show are (a) the numbers of men successfully dealt with by regimental officers without recourse to a psychiatrist or without evacuation; (b) the policy of the formation as regards evacuation; (c) the kind of duty to which 'cured' patients are returned; (d) the number of patients who actually arrive at the destination to which they have been sent; and (e) the kind of service these men render after they have been returned." (McNeel, 1946)

It is possible that in our zeal to ensure that the principles of Combat Stress Reaction casualty treatment are understood and effectively employed at the sub unit level, we are creating the impression that there will be few who cannot be returned to battle. Such a situation would obviate the need for a personnel conservation system which included Special Employment Companies and, perhaps, Reallocation Units. If, however, as our experience tends to indicate, it does not apply, we would repeat our mistakes of the past without the luxury of time to correct them. The science has not advanced so far that we will alter appreciably the number of severe or chronic neuropsychiatric casualties. We may keep more of them in the line a bit longer (or we may not), but we must have a system in place to eventually salvage these chronic cases. In Canada's case, in excess of 10,000 men - a full division - were neuropsychiatric casualties during the Second World War. Eighty-five percent of these casualties were salvaged and retained in Theatre with the implementation of the personnel conservation system.

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* The abbreviation P.A.C. refers to files held in the Public Archives Canada.

THE DEVELOPMENT OF A DISASTER SERVICES PLAN BY
THE DALLAS PSYCHOLOGICAL ASSOCIATION

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With the crash of Delta Flight 191 in the summer of 1985, the Dallas community was faced with the awful reality of a mass casualty disaster. At that time the Dallas Chapter of the American Red Cross was the only local organization capable of responding to such a disaster. And, while the Red Cross had a Fallen Aircraft Plan, it did not have a Human Services Delivery Plan. In the fall of 1985 the Executive Committee of the Dallas Psychological Association (DPA) appointed a Disaster Services Committee to determine what psychological services were needed in the event of a disaster, and how DPA could provide those services.

The Committee quickly joined forces with the Disaster Services Committee of the Dallas Red Cross and this working alliance remains firmly intact. At the same time our committee was forming, other mental health and health organizations took similar action. Working together, largely under the umbrella of the Red Cross, we devised a plan entitled The Hazard Specific Plan for Human Service Delivery in Mass Casualty Incidents. The plan calls for the participation of the following groups:

American Red Cross, Dallas Chapter
Dallas Psychological Association
Greater Dallas Community of Churches
National Association of Social Workers, Dallas Unit
North Texas Psychiatric Society
Texas Nurses Association, District 4.

This plan provides for an organized response to meet the emotional, health and personal needs of survivors and families of victims. Additionally, the plan involves assisting emergency responders in coping with the unique stress that may result from a critical incident. Under this plan "multi-discipline" human service teams are dispatched to locations where services may be required. These may include the following:

the crash site
the airline terminal
temporary morgues
hospitals where survivors are taken
hotels where families of victims are housed.

The plan will also be implemented in the event of a mass casualty incident that occurs in another city, but which involves Dallas area residents.

At least once a year individuals from the participating human service agencies attend a training exercise focusing on the following:

1. An orientation to the unique mental health and medical needs which result from disaster incidents.

2. An orientation to Parkland Memorial Hospital, Dallas-Fort Worth Airport and Dallas Love Field.

3. A review of the Plan for Human Service Delivery in Mass Casualty Incidents and the Fallen Aircraft Plan.

4. An exercise of all, or part, of the Plan.

Thus far I have outlined a cooperative plan involving a number of mental health agencies. I will now focus on the specific contributions of psychologists. Dallas psychologists volunteer their services to the community in the event of a disaster at four different levels. The first involves on-site clinical intervention during the immediate aftermath of a disaster. We need a fairly large pool of psychologists from which to draw because we know that many may not have the flexibility in their professional practices to immediately respond to an emergency. This on-site intervention has two primary objectives. The first involves crisis intervention with survivors once their medical needs have been met and with the families of both victims and survivors. The second involves consultation with personnel (e.g. airline employees) who deal with the families.

The second level of involvement focuses on debriefing the personnel, from any profession, who respond to the emergency. As psychologists, we recognize the tremendous need to attend to the emotional well-being of the emergency responders. Some psychologists may provide both on-site intervention and debriefing, but we also recognize that psychologists who have taken on the role of emergency responder may themselves need to be debriefed.

The third level of involvement focuses on after-care counseling for individuals whose lives were affected by the disaster. The counseling may occur days, weeks and even months following the disaster. This counseling will adhere to crisis intervention guidelines in that it will be specific, focused, and time-limited. Psychologists volunteer their professional services for one to six sessions which may include individual, family, and group counseling. If, after six sessions, the person or persons request further counseling they will be referred to another mental health professional. Once the gratis counseling has ended, the psychologist cannot see the individual(s) in his private practice. Additionally, in order to be involved in the on-site intervention, debriefing, and post-incident counseling a psychologist must be licensed by the State of Texas and carry liability insurance.

The fourth level of involvement by psychologists focuses on education and training. This includes the following:

1. participating in activities aimed at educating the community about needs which arise from disasters. Psychologists may write press releases and public information brochures about typical emotional responses to disasters and trauma. They may give public talks through the Dallas Psychological Association's Speakers Bureau.

2. leading training exercises which focus on the mental health aspects of disasters.

3. educating and training mental health professionals in crisis intervention and debriefing processes.

4. consulting with organizations (e.g. airlines, police, paramedics) about taking into consideration the emotional needs of survivors, families of victims and their own personnel.

Lastly, I want to address the issue of stereotypic views of psychologists which may be held by those we seek to help. Many may believe that psychologists only help those who are "sick" or "disturbed" and not people such as themselves. The message we wish to convey to these individuals is that we are there to assist ordinary people in extraordinary circumstances.

THE NATIONAL DISASTER MEDICAL SYSTEM (NDMS)

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The National Disaster Medical System (NDMS) evolved from the earlier conceived Civilian-Military Contingency Hospital System (CMCHS), a Department of Defense program initiated with all service medical departments in 1980. A conversion from CMCHS to NDMS was completed early in calendar year 1986. NDMS was established in 1983 by Presidential Declaration, the national plan of action for emergency mobilization preparedness and NSDD-7 dated 22 Jul 1982. The initial design of NDMS was to fulfill the following three main objectives.

- (1) To provide medical assistance to a disaster area in the form of medical assistance teams and medical supplies and equipment.
- (2) To evacuate patients that cannot be cared for in the affected area to designated locations elsewhere in the nation.
- (3) To provide hospitalization in a national network of hospitals that have agreed to accept patients in the event of a national emergency.

The system is designed to care for the victims of any incident that exceeds the medical care capability of an affected State, Region, or Federal Medical Care System. It may be used in a variety of emergency events, such as an earthquake, an industrial disaster, a refugee influx, or a military contingency. NDMS planners have scaled the system to deal with a great California earthquake. The system is therefore designed to accept up to 100,000 seriously injured patients requiring hospitalization. The system cannot handle more than this number, and is thus not adaptable to nuclear war situations.

The program is a combined effort of the Army, Air Force, Navy, and the Veterans Administration. Each federal medical treatment facility acts as the Federal Coordinating Center (FCC) for its designated area of responsibility. The FCC solicits voluntary bed commitments from civilian hospitals and conducts annual tests of the program. The goal for the NDMS program CONUS-wide is 100,000 committed hospital beds.

In the event of a disaster, the Governor of an affected state may request Federal assistance under the authority of the Disaster Relief Act of 1974. Upon receipt of a Federal Emergency Management Agency (FEMA) recommendation, the President may make a declaration of a "major disaster" or emergency. Generally NDMS will only be called on in conditions of "major disasters" as defined in PL 93-288. In the event of a national security emergency, the Secretary of Defense would have authority to activate the system.

In the event of mobilization all available military medical sources would be utilized prior to activation of the NDMS system. The military beds, (current, planned expansion, and planned construction) would be used to ensure the rapid return to duty of the soldier. The primary backup to DOD medical facilities is provided by the Veterans Administration (VA) and the Department of Defense Contingency Hospital System Plan as defined under Public Law 97-174. The VA/DOD Contingency Hospital System was established to promote greater sharing of health care resources between the VA and the DOD during periods of war or national emergency to members of the Armed Forces on active duty.

The status of the NDMS program is measured in the number of "beds" that have been coordinated in the total system. This is normally calculated on a yearly basis. It is important to understand that the number represents bed spaces. Bed spaces are defined as beds that do not have staffing or logistical support. Many civilian facilities that sign up beds are committing beds on a closed ward. They are agreeing to activate this ward in a time of need. This concept will work for the system's primary mission, peacetime disaster support. The number of beds must be evaluated more closely for a military contingency. The following must be added into the equation:

- (1) In order for the civilian hospital to expand to the maximum number of NDMS beds it must increase its staff and increase supplies. This would come at a time when the reserves are being called to active duty and the military medical systems are expanding drawing on all sources of supplies and equipment. Not only would it be difficult to hire additional medical staff, all of their current staffing which are in the reserves would be departing.

- (2) On a day to day basis the military medical care system's patient mix is 70% dependent and 30% military. During a military contingency (mobilization) dependent care would be phased out and placed on CHAMPUS (i.e. civilian hospitals).

NDMS is only activated when specific criteria are met as defined in PL 93-288. Declaration of a national emergency does not automatically activate NDMS. Mobilization at any level also does not activate NDMS. It is a separate medical emergency system primarily designed for civilian disasters, but can also be utilized, when appropriate, to support the DOD medical systems.

NDMS is not a mobilization planning initiative and is not a replacement, nor an alternative to military operating hospital bed requirements. NDMS beds will only be utilized when operating military beds and beds obtained through the VA/DOD contingency hospital system are fully utilized or it is expected that they will be exceeded.

The philosophy that the optimum hospital bed for the soldier is a military operating hospital bed, has not changed, and there has been no change in policy. The rapid return to duty of the soldier can only be ensured by the use of military operating hospital beds.

PSYCHOLOGICAL INTERVENTION WITH AIRLINE CRASH VICTIMS: A NEED FOR SERVICE

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Commercial airline disasters are frequent occurrences in modern civilization. The following communities have witnessed major air disasters at or near their airports within the last few years: Boston, Chicago, Dallas, Denver, Detroit, Los Angeles, New Orleans, Reno, San Diego, San Francisco, and Washington. In spite of efforts to build safer aircraft, to provide better controlled airways, to develop better prediction and communications about hazardous weather systems, to select and train flight crews, and to reduce the possibility of air terrorism, airline disasters continue to plague modern aviation. The measures that have been taken to increase air safety have fallen short of accident free aviation; air crashes appear to be an evil and seemingly inevitable reality.

Airports involved in air carrier operations are required to have a disaster plan which incorporates rescue and medical evacuation procedures and personnel. In the event of an airplane crash at an airfield, established disaster units are mobilized to provide on-site fire, rescue, and first-aid services for victims and medical evacuation units are called upon to aid and transport injured passengers and bystanders to the hospital. However, few provisions have been made at most airports for organizing and providing psychological support for survivors and family members of crash victims.

The immediate consequences of airline crashes are devastating for the people involved: Survivors of air crashes may have traumatic responses to the incident that curtail their immediate functioning and place great strain on their psychological adjustment for weeks to come. People killed in accidents usually leave behind grieving family and friends whose lives come to a standstill with the shock; surviving family members often experience extensive psychological trauma following an accident requiring extensive re-evaluation of their lives since they may have to raise families or assume responsibilities of those killed; and, since many air travelers are business men and women, some corporations have been devastated with the loss of key executives. The long term consequences of air disasters can be great. Airline crash survivors may suffer from post-traumatic-stress disorder for months; surviving families may have considerable difficulty adapting to drastically altered life circumstances; communities may suffer great losses following air crashes, not only in terms of losing productive citizens, but often in terms of losing important business ties and other economic, job producing possibilities.

Similarities and Differences of Airline Crash Disasters to Other Disasters.

There is an extensive literature on human response and treatment needs for people experiencing a disaster (Butcher and Dunn, In press). In many respects the emotional responses and adjustment demands of air crash victims are similar to those of victims of natural disasters such as hurricane, floods, nuclear accident, and volcanic eruptions (Mangelsdorff, 1985). However, there are a number of factors which enter into airline crashes that produce clear

differences, for example:

1) Unlike some tragedies, airplane crashes are typically sudden and unexpected. There is usually no warning and no time to prepare. Many victims of air disasters are in the most productive periods of their lives and may have given no thought to their own demise. Consequently, they may leave their survivors with few resources and many loose ends.

2) Airplane crashes are usually chaotic events even for hardened disaster workers. They may be up-ended by the enormity of an air disaster often involving extensive destruction, fire, and scattered human remains. No one is psychologically prepared for the aftermath of an airline crash.

3) Air disasters usually occur away from one's familiar environment and usually with strangers. Consequently, there is usually no existing sense of community that characterizes many disasters, such as floods, tornadoes, and hurricanes, and provides an immediate support network for survivors.

4) The impact of an airline disaster has a strong emotional generalization effect. It impacts to a greater or lesser degree a larger number of individuals than those immediately affected by the accident itself. There is clearly a "dosage effect" operating in airline crashes; that is, those closest to the center of the trauma are most severely affected. However, an airplane crash seems to touch many lives, from airline employees to airport maintenance personnel.

5) Aviation accidents are different from natural disasters where human beings are not typically targeted for blame. When the disaster is "human-made" there is considerable blame attribution and the anger, characteristically felt by victims (even those in natural disasters), finds a definite focus. Airline accidents, as other industrial accidents, evoke a considerable amount of anger and litigation motivation which seems to prolong the post-disaster readjustment phase for months or years to come.

Value of Psychological Services in an Airline Disaster Response Program.

The intense emotional response of individuals who are caught up in an airline disaster, whether it be a survivor or a family member or a disaster worker, is well understood and manageable. There are well established procedures for ameliorating the resulting emotional distress (Butcher, Maudal, and Stelmachers, 1983). Psychological distress can be reduced by rapid intervention using psychological counseling; moreover, a more effective future psychological adjustment can be effected by intervention (Williams, Solomon, and Bartone).

Psychological intervention disaster response is both needed and effective in assisting persons at crash locations and in the aftermath of a disaster.

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EFFECTS OF MORALE ON COMBAT PERFORMANCE *

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Notwithstanding national differences such as numerical superiority of men or advanced technology of weapon systems, the outcome of any battle will depend to a significant extent on the way individual soldiers and groups of soldiers behave on the battlefield. Furthermore, depending upon the nationality of the opposing forces and the battle scenario, their level of morale and hence reactions to certain battlefield conditions will be markedly different. As pointed out by Brigadier Balchin in 1945, in his paper on battle morale: "Many aspects of morale are linked with national characteristics and ways of life." Results which are reliable for one nation may be quite unreliable for another. A full understanding of battle morale calls for a full understanding of national psychology.

Historical evidence is valuable for the light it sheds directly on the combat environment and on man's reaction to it. War is the best laboratory for assessing the effects of morale on combat performance. Different campaigns and scenarios, fought by different nationalities, and troops who have received different levels of training and are at different levels of combat effectiveness can be analyzed. Therefore, the model of morale offered in this paper takes into account the soldier's background, the soldier himself, and the battle scenario. Given a knowledge of a force's background and the battle scenario, it is possible to determine the probable stress casualty rates during battle, both as an indicator of morale, and as a measure of the number of troops capable of fighting.

The incidence of stress casualties has been studied for two reasons. Firstly, it is suggested that the point at which a soldier becomes a stress casualty corresponds to a low point in morale. Thus the number of stress casualties can be used as a "barometer" to gauge the overall morale of the troops. Conversely, a knowledge of the battle scenario and morale of the troops can give us an idea of the number of stress casualties to expect. There may be imperfections in this approach, but it does provide a means of comparing a number of otherwise quite different campaigns. Secondly, stress casualties represent a proportion of troops who are incapable of fighting for reasons other than death or wounding, and, as such, need to be taken into account when assessing overall troop effectiveness.

Training soldiers to cope with the stresses of battle is important if effective performance is to be maintained by individuals and groups on the battlefield. Ethical methods of devising realistic training exercises need to be considered. Some thoughts on methods of devising some realistic training programs/exercises which could enhance morale are offered for consideration. Furthermore, such training exercises could include, for example, role played reactions to combat stress. This would not only allow mental health personnel practice in making diagnosis and management decisions, but also help commanders

*The opinions expressed in this paper are those of the author and do not necessarily represent those of the Ministry of Defence.

learn to recognize early signs of breakdown, perform "psychological" first aid, refer the severely stressed to the medic, and accept recovered casualties back into the unit following front line treatment. In this context a handbook for Junior Commanders which would act as an aide memoir on "psychological" first aid training has been devised by Army Personnel Research Establishment (APRE). Units often have handbooks for their own specialized duties, and a modified version of APRE's aide memoir is being included in the British Army's new Tactical Aide Memoir which will be issued in 1988.

MODEL OF MORALE

Although there are many definitions of morale, we will approach the problem by examining the various interacting components which together determine the soldier's morale and military performance on the battlefield. In general, there appear to be three groups of factors which will have a major effect on a soldier's morale in battle (Labuc, 1983). These are given in Figure 1.

(a) Background factors which are essentially not under the man's control. They include a number of cultural elements such as education, political indoctrination, and support at home. They also include military elements such as quality of training, leadership, unit cohesion and any previous battle experience. Historical and field trials data provide us with this latter information.

(b) Soldier factors are basically internal to the man and concern his psychological and physical well-being. They include his conviction in the cause, his confidence in himself, his equipment, his commanders and his fellow combatants. They also include his fears and anxieties regarding death, wounding, loss of self-esteem, and the safety of his family.

(c) Battle factors concern the soldier's experience during the current engagement. The type of terrain and the climate will have an effect, as will factors relating more directly to the fighting itself; for example, whether in offense or defense, the duration and intensity of the fighting, the relative losses of men and equipment, or the adequacy of the logistic support available.

The factors listed under Background, Soldier, Battle, are not intended to be exhaustive, but they do illustrate the types of factor felt to be important. The categories themselves will not be mutually exclusive; there will be gray areas and interaction over time between the factors comprising the three categories.

THOUGHTS FOR THE FUTURE

According to Abraham (1982) and others, effective preventive measures against psychological stress are group cohesion, arduous training, and realistic combat exercises. In other words, the number of stress casualties can be reduced if leaders maximize their unit's morale, and if realistic and arduous training is carried out during peacetime. Physical conditioning and training to cope with stress reactions are also very important.

Group cohesion From World War II data, Israeli and Korean War data, there is little question that the effects of stress are related to group characteristics rather than to individual personality traits. Group leadership is very important and, for example, the Israelis do appear to try and keep the same groups and leaders together throughout their Army career and when in the Reserves. Therefore, it seems that organization, that is, keeping the same unit together, can create the conditions for cohesion to develop. Nevertheless, if in battle groups are split up, what is the smallest number of men necessary for effective performance and good group cohesion? The British have four men per half section/ fire team, four men per tank. Is it possible that four is the ideal number?

Physical conditioning Combat does not make allowances for tired men whether they are soldiers marching with heavy loads or commanders making crucial decisions. Routine physical training is not enough; a rigorous physical training program based on a future war scenario should be devised. In this context, it is noteworthy that physical fitness training in the British Army has been extended to include basic fitness training and routine mandatory tests of both basic and combat fitness. Basic fitness training and testing are now being extended to the British Territorial Army.

Training. Evidence from Arousal Theory shows that when a person is over-aroused performance deteriorates. When over-aroused composure is lost, wrong decisions can be made, performance deteriorates, and at worst the person can cease to function at all. Training to overcome the effects of over-arousal is necessary. It is well documented in the literature on stress, that personal perception of stress or a threat, will influence performance under that threat. In other words, the more threatening a person perceives a situation the more he will believe that he will perform poorly, and, as a result, the more his actual performance will deteriorate. One way in which we can reduce the deleterious effects of stress on performance is to modify personal perception of a stress or threat. This can be done through training.

Arduous training. Such training accelerates the process by expanding the boundaries of a soldier's accomplishments thereby giving him satisfaction and confidence. By rehearsing his tasks repeatedly under different conditions, the soldier increases the probability that he will function automatically under combat conditions. The types of conditions simulated include NBC, sleep loss, in different tactical exercises. This concept of training is carried out by the Soviet Forces (Labuc and Donnelly, 1982). The benefit of such training is two-fold. Firstly, it is evident from the literature on stress that well-rehearsed, or over-learned tasks are least prone to psychological stress; and secondly, by keeping the soldier occupied with some purposeful activity in times of stress, the unit ensures that the soldier is better able to cope with his anxiety and so will be less likely to panic. His lower level of anxiety will permit him to see the situation more objectively (even when carrying out his well-drilled activity), and to decide upon his next course of action.

Cognitive tasks cannot be carried out effectively under high levels of anxiety. For example, Labuc and MacDonald (1982) tested novice paratroops prior to and just after their first parachute descent from an aircraft and found their performance on a cognitive task well below par. In order to overcome this problem, personnel such as astronauts are drilled and re-drilled on every conceivable operation; they are given as comprehensive knowledge of their equipment and the circumstances of their flight as is possible. In consequence, their anxiety and fear of the unknown has been significantly reduced. The Soviet

and Israeli troops train and rehearse drills in as realistic conditions as possible, as do British troops such as the Marines and Paratroops, and of course British Special Forces.

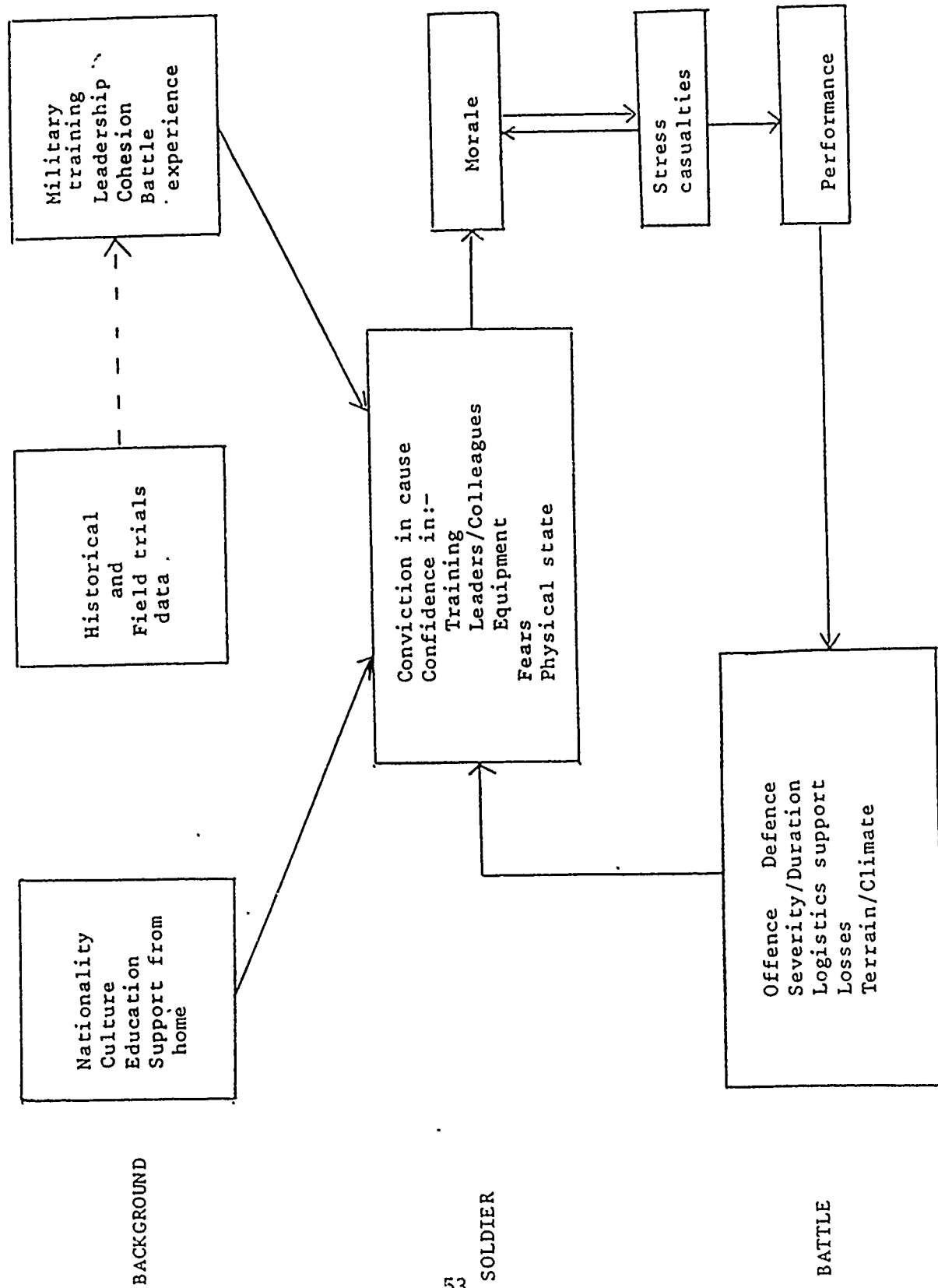
Given that a soldier can be exposed to anxiety by parachuting, rock climbing, live firing practice, etc. he also needs to be familiarized with the sights and sounds of war, for example, the noise of bombardment.

Realism in training. It is important to create conditions that approximate as closely as possible the real situation as for example: by live firing during training exercises and dry firing exercises using simulation techniques when soldiers are tired. In this context extended independent operations are important; training to cope with long periods of hunger and lack of information from HQ should be encouraged. Preservation of food, water and ammunition is as important as good tactics and shooting. Learning to act independently without communication will be important for a fluid war and when commanders have been killed or wounded. Training to be flexible is important, and methods need to be devised in order to teach this asset.

When fighting at night the soldiers' biological rhythms are out of phase. APRE's work on sleep loss shows that performance during the early hours of the morning is worse than during the day time. Labuc (1978) has also shown that cognitive performance is deleteriously affected for about 10 minutes after awakening from sleep, no matter what the time of day. Training to cope with and overcome these effects is necessary.

Training to cope with stress reactions. Training exercises might include role-played stress casualty symptoms to allow mental health personnel practice in making diagnosis and management decisions. More importantly though, it would allow commanders to learn to recognize early signs of breakdown, perform "psychological" first aid, refer the severely stressed for treatment and accept recovered soldiers back into the unit following front line treatment. Commanders must bear in mind that stress casualties represent recoverable manpower on the battlefield. In this context APRE has devised a small aide memoir for NCOs and Junior Commanders which should be issued during "psychological first aid" training and/or lectures. Annex A contains this aide memoir produced at the original size. Although Part 2 of the memoir is related to man management, I do not in any way wish to imply that commanders need information on how to manage their men. Rather, the handbook was devised as an aide memoir on several factors related to soldiers behaviour when under stress.

Figure 1





STRESS IN BATTLE

A Commanders Guide

Part 1: COMBAT STRESS AND TREATMENT

Part 2: MAXIMIZING MORALE

Part 3: NBC OPERATIONS

Some reactions to stress must be expected

This is not a sign of illness

The effects can be reduced by immediate action

Look for stress reactions in yourself and in others

Help others as soldier and friend

Only if reactions persist or become more severe call for your section leader or a medic

Part 1: COMBAT STRESS AND TREATMENT

Trembling
Sweating
Nausea
Frequent diarrhoea
Frequent urination
Pounding heart
Stomach pains
Anxiety
Agitation

Most soldiers have these reactions

No special treatment necessary

Not moving or talking
Seems without emotion
Apathy - cannot be bothered
Floodiness
Loss of sense of humour
Unable to concentrate on job
Decreased appetite
Overactive
Emotional outbursts
Loss of self-control
Argumentative
Aggressive
Unable to sleep

Look out for these reactions

Give on the Spot
Treatment

Remain calm
Do not ridicule
Calm the soldier
Reassure the soldier
Show understanding
Share a joke
Team up with him for a while
If possible give him a warm drink/cigarette
Give him a specific task

If reactions persist or become more severe report to your superior

Repeated nausea and vomiting
Inability to use some parts of body
Unable to perform his job
Feelings of guilt
Excessive use of alcohol/tobacco

Severe reactions

Unit Treatment is necessary

Keep soldier with unit but away from battle
Allow him to sleep
Treat him as a soldier not as a patient
Have someone stay near him - superior
Have members of his unit interested in his welfare
Have him help on small jobs
Return him to unit after about 2 days

If reactions still persist or are very severe

CALL A MEDIC

Part 2: TO MAXIMIZE MORALE

Look after the needs of the soldier

*Know your man

- *Be friendly and approachable
- *Know a few personal details - wife's name, home town
- *Show concern over their welfare - food/rest, etc
- *Share hardships
- *Show confidence in the soldier
- *Reward good performance
- *Do not criticize him in front of other men
- *Pair inexperienced with experienced men

*Look out for these signs

- *Young inexperienced recruit
- *Soldiers with financial, marital/personal problems
- *Soldier who overindulges in alcohol/drugs
- *The loner who is uncommunicative
- *The restless soldier
- *The pessimist who believes he is doomed
- *The soldier who is ill prepared for his assignment

Encourage team spirit

*Know your Unit

- *Praise individuals and teams for good performance
- *Point out the importance of the Unit role
- *Emphasize the importance of Unit effort
- *Express confidence in Unit
- *Involve Unit in making future plans
- *Make plans realistic for the Unit/soldiers abilities
- *Disseminate information whenever possible
- *Allocate tasks fairly

*Look out for these signs

- *Lack of team spirit
- *Low productivity
- *Bickering
- *Dissatisfaction about everything/anything
- *Reports sick for minor illnesses
- *Oversensitivity to criticism
- *Ignoring orders or taking short cuts
- *Dumb insolence
- *AWOL

Match the soldiers ability to the jobs

Think WHAT must be done
HOW to do it
WHO can do it
HOW LONG must he do it

*Know the job demands

- *Match the job requirements to the soldiers abilities
- *When possible assign 2 men/per job
- *Ensure soldier knows exactly what he has to do
- *Ensure he knows how to do the job
- *Make sure orders are clear and understood
- *Make sure radio communications are clearly understood
- *Repeat communications if necessary
- *Rotate jobs when possible
- *Instil soldiers confidence in the kit used

*Look for:

- *Inaccurate communications
- *Messages over-simplified - loss of detail
- *Confusion - soldier not sure what to do
- *Forgetfulness - procedures not followed properly
- *Soldier misses vital bit of information
- *Lack of awareness absorbed in minor problems
- *Soldier slow and cautious - lacks confidence

Part 3: NBC OPERATION

Be aware of these factors

- *Combat stress reactions may occur earlier than in conventional combat
- *IPE increases feelings of isolation which can lead to loss of individual/group morale and military performance
- *Soldiers may panic and attempt to remove respirator or ignore drills
- *Soldiers may accidentally give themselves overdoses of prophylactic drugs
- *The use of prophylactic drugs could cause behavioural changes such as slowing of actions/reactions
- *Maintain morale by keeping in regular contact with the men and keeping them informed of the situation
- *Reassure soldiers of:
 - *Efficacy of IPE
 - *Effectiveness of prophylactic drugs and decontamination drills

INTERVENTION STRATEGIES FOR
VICTIMS OF TERRORISM/DISASTERS:
USAREUR SCENARIO

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It does appear that international terrorism is here to stay and there are those that feel that the format of terrorists' events of the future will be far different than those that we have known from the past two decades. In a recent presentation at a gathering of military and civilian mental health professionals in West Germany, shortly after the Achille Lauro hijacking, Robert Blum, M.D., suggested that the incidents occurring from organized terrorism, identified with a strategic plan of action, and allied with an identified ideological cause are becoming the exception rather than the rule (1986). Accordingly, the likelihood of physical casualties occurring during an event is on the rise, and the victim may not be so safe and may not be able to rely on the development of the now infamous Stockholm Syndrome.

Given these factors, the Armed Services need to be prepared to respond with a model of intervention and response allowing for a rapid constitution and deployment of medical teams responsible for a given area of intervention and a well defined method for mobility of response or method of getting to the aftermath of an international terrorist event. Many geopolitical factors were clearly the precipitant for the formulation and formalization of response teams such as the USN's team known as SPRINT (Special Psychiatric Rapid Intervention Team); such a team has been in existence since 1977. The U.S. Army however, responded somewhat differently to the various crises in USAREUR. Some of the crises have generated casualties from international terrorist incidents and it was initially felt that existing fixed medical facilities were sufficient to provide the appropriate medical intervention and disposition. However, the bombing of the Marine barracks in Beirut tremendously challenged this thinking, and almost immediately initiatives were examined to alter the strategies for immediate crises health care delivery under these circumstances in addition to those generated as a result of manmade and natural disasters within the theater.

The Stress Management Team (SMT) is one of several deployable teams that are organized, staffed, and logistically supported as set forth in the guidelines of 7th MEDCOM OPORD 1-86 (Disaster Relief/Contingency Operations, 30 May 1986) and each of these can be tailored to the type of mission. Some of these include the Triage Team, deployable in three hours; the Emergency Treatment/Stabilization Team, deployable in eight hours; the Surgical Team, deployable in eight hours; the Contingency Hospital, deployable within 24 hours. Others include the Medical Disaster Area Survey Team and the National Medical Liaison Team.

The SMT's mission statement is as follows:

"The SMT will provide mental health treatment services and initiate preventive treatment measures to individuals or groups involved as victims of disasters, terrorists activities and/or hostage situations. The team will be

able to provide the following services: crisis intervention, counselling, triage and psychotropic drug administration. One or more teams will be able to care for one to four hundred people. (7th MEDCOM OPORD 1-86, ANNEX L, Para.2).

The composition of the core SMT is as follows:

| | Quantity | MOS/SSI | DTY PSN | UNIT |
|---|----------|---------|----------------------------------|------------------------------------|
| Team Ldr | 1 | 60W | StaffPsy | 7th MEDCOM |
| Psychiatrist (Assn't Team Leader) | 2 | 60w/60U | ADAPCP/ Staff Psychiatrist | " 130th StaHos |
| Psychologist | 1 | 68S | Staff Psychologist | 130th StaHos |
| Social Worker | 3 | 68R | SW Consul/ | 7th MEDCOM & 130TH StaHos |
| Chaplain | 2 | 56A | Staff Chaplain | 7th M |
| | 1 | " | Hosp Chap | 97th GenHos |

Furthermore, this core team had additional augmentees from the other fixed medical facilities in the USAREUR Area of Responsibility. Augmentees were also critical in their participation of all the activities of the Command Post of the Emergency Operation Center.

There are a variety of intervention strata in which the SMT can potentially become involved. These are

- (1) Negotiation
- (2) Retrieval
- (3) Hospitalization
- (4) De-Briefing
- (5) Re-Entry

As of this writing, most of the applications of the SMT to date have concentrated on the latter four. In each, there is required a specific focus and application of the appropriate element of the acronym developed by the Armed Services known as BICEPS, namely Brevity, Immediacy, Centrality, Expectancy and Proximity. Furthermore, the SOP of the SMT identifies four primary functions:

(1) Triage: identifying those that are in need of immediate medical and mental health care. Often, the individuals when asked as an assembled group will identify themselves. Also, the attending medical personnel and flight crew are invaluable extensions of the SMT and can facilitate the identification process.

(2) Management of Acute Emotional Problems: the full range of possible reactions can be expected to occur. Reactions such as anxiety, lethargy, fear, agitation, exhaustion/fatigue, numbing, automatic behavior, excessive compliance with authority figures, crying, etc. Often, the relationships that developed during the incident continue and may be an additional source of support during the initial period following the termination of the crisis.

(3) Consultation: perhaps one of the most powerful interventions performed by members of the SMT. The targets of this are the flight crew including the pilots, the attending medical personnel, other SMT members, other interested personnel such as the FBI and members of the State Department. On a number of occasions, members of the SMT have had the opportunity to provide on the spot "inservice training" to the crew of an Air Force aeromedical evacuation team or the flight attendants of a commercial airline who were participating in the return of the victims to the homeland. On one instance, the vice president of the airline company who was aboard the aircraft solicited consultations as to strategies for assisting the pilots of the seized aircraft.

(4) Prevention: This particular function is considered by most on the team to be one of the most crucial. It is the one felt to have the greatest possible impact for the future of an individual who has experienced a terrorist incident or some form of a disaster. Immediately upon retrieval or rescue, reassurances are initiated noting that there are expected and natural/normal reactions that are totally within the range of human experiences. This can be done with individuals but perhaps is most effective with the established, intact groups. With the groups there seems to be a further dispelling of the notion that one's behavior during captivity or the disaster was "abnormal." It is extremely important that the family members who may be available are briefed as to the expected range of reactions over the ensuing months (and possibly years).

(5) Team Maintenance/Health: applying many of the same principles to the Team itself. This is perhaps one of the most frequently overlooked functions of the SMT yet certainly should be implemented throughout various times of the mission in order to insure that there are no casualties developing among the team members themselves. Sleep discipline is one requirement. The flights for the retrieval/rescue component of the mission could involve crossing and returning over several time zones. Periodic regrouping of the team to discuss shared observations, data, strategies, and reactions, permits a release of the very powerful emotional buildup that gets placed on the back burner while one is working at a fast and furious pace. Once the mission has been completed, the core members of the team gather as a group and share their experiences with other members of the SMT who may not have been directly involved in the mission and who at that time become somewhat like group facilitators for those that were. Team members are encouraged to maintain frequent contact with each other throughout the ensuing weeks as they return to their "normal" duties when they may discover some psychological "decompression" difficulties.

During the past several years, the SMT has been involved in a number of operations. What should be remembered is that on various occasions the team would be alerted and staged in various parts of the theater only for the mission not to occur. Also, each mission has its unique circumstances, and, as will be seen later, not all of them are managed in exactly the same fashion.

| MISSION | DATES |
|---|-----------------------|
| TWA-Athens Algiers, Beirut, Algiers, Beirut | 29 Jun- 2 Jul 1985 |
| <u>Achille Lauro</u> (see Table 1) | 10-12 Oct 1985 |
| Beirut Hostages (pre deployment) | 22-27 Nov 1985 |
| Malta Hijacking (alert) | 23-26 Nov 1985 |
| 101st Airborne | 17-18 Dec 1985 |
| Beirut Hostages (alert) | 17-19 Jan 1986 |
| Radiation Tour Group-Chernobyl | 1-4 May 1986 |
| Beirut Hostages (Fr. Jenco) | 26-29 Jul 1986 |
| PanAm 73- Karachi | 5-8 Sep 1986 |
| USS Stark Persian Gulf | Summer 1987 |

McDuff (1986) has written extensively about the application of the SMT throughout the USAREUR theater and provided a useful phase concept to the operations:

(1) Anticipation of Release: This is obviously appropriate primarily for a hostage/victim scenario. A member or members of the SMT are placed in the vicinity of the victim and as close as is diplomatically possible (principle of proximity) in order to rapidly begin the work for eventual return home (principle of immediacy). Length of this phase can be from mere hours to days. Quite often, the victim under these circumstances may develop a similar reaction and return of symptoms that were evident in the initial period of capture but then slowly dissipated.

(2) Release Phase. Victim(s) is (are) exposed to large numbers of individuals including members of the health care teams. Some of the victims may form intense, close bonds with a particular member of the team at this point. This relationship ought to remain until the retrieval phase takes place and perhaps continue beyond then as well. Simple instructions to the victims are imperative as is keeping them informed as to each facet of the release and upcoming phases. Typically, this phase lasts about 24 hours.

(3) Retrieval Phase. At this point, the victim becomes aware that the end of his ordeal is in fact a reality and perhaps here is when the guard is let down a bit. Exhaustion, sensory overload, reactivation of the initial experience, brief cognitive confusion, bursting into tears, disturbing thoughts are all likely to occur. During the retrieval phase, simplicity again is paramount, and there needs to be extra effort to control excessive demands on the victims that could lead to further overstimulation (i.e. the media). This phase normally lasts from 24 to 48 hours.

(4) Hospitalization and Debriefing Phase: There are mixed feelings as to the necessity of this particular phase for all victims because it is felt that the role of "illness" may be inadvertently conveyed which may be a compromise of the principle of expectancy. However, it does comply with the principle of centrality having former hostages in one location, and it does acknowledge that the process of decompression for them ought to capitalize on the existence of small groups formed during their ordeal. It is the author's personal contention that this can be accomplished away from traditional medical facilities while still gathering them in one location. However, the model in USAREUR traditionally places the former hostages at Weisbaden AF Hospital and most recently at other medical facilities throughout the Army network. It is also during this phase that the debriefing process is initiated with members of the FBI and the State Department. More than likely, the first physical contact with the former hostage's family occurs at this juncture, and it has been observed that the arrival of the family on the second day is optimal; this allows the victim to acclimate to his/her surroundings. A model that has proven useful for the illustration of these reactions is included in Table 2. The barrage of stimulation and excitement over the past several days can, upon the return home, lead to an emotional letdown as the hostage (and helper) prepare to go on with life "as usual." Ways of coping with this and any other future difficulties can be discussed.

(5) Re-Entry Phase: As the victim leaves the hospital or other structured environment, there is likely to be a lessening of the acute emotional reaction, a renewal process of their captivity or disaster, a sense of comfort and a confidence that they will be able to cope with the demands of the upcoming months (principle of expectancy). The bulk of work to be done by the former hostage or disaster victim in this phase requires usually four to six weeks, although obviously each individual will process these re-entry events in a fashion according to his own schedule.

A preventative intervention model is illustrated by McDuff in Table 3. Although this model had evolved primarily in the SMT's work with hostage scenarios, the principles are easily transferred to disaster situations as well.

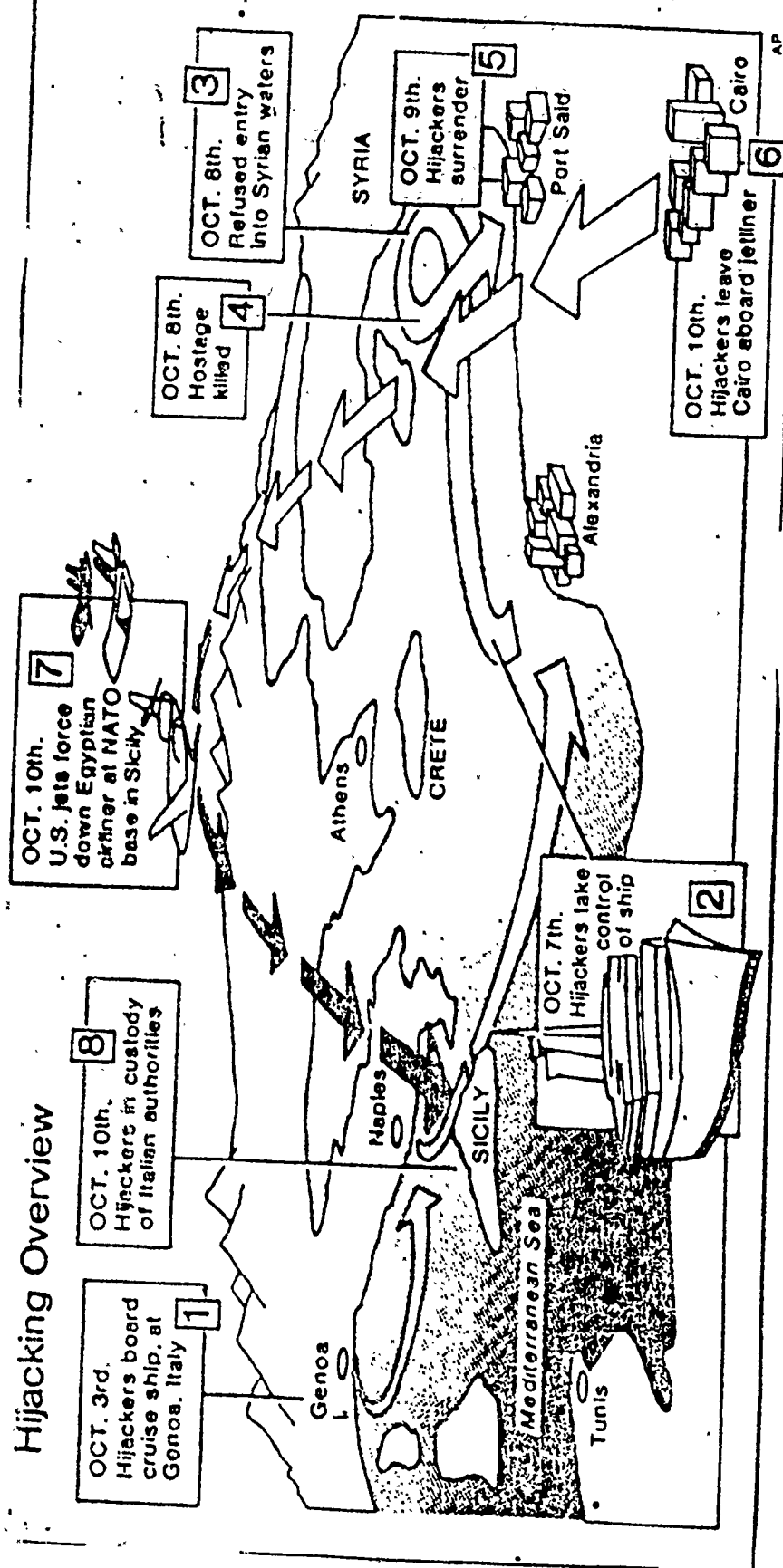
CONCLUSIONS

The Stress Management Team as a component of the 7th MEDCOM Disaster/Relief Plan and concept appears to have proven itself as an effective intervention strategy for victims of both disaster and terrorist incidents. Using the principles long advocated in combat health care, the SMT, as an integral portion of a complex response plan, is a viable format for early intervention and prevention of possible debilitating post traumatic stress disorders.

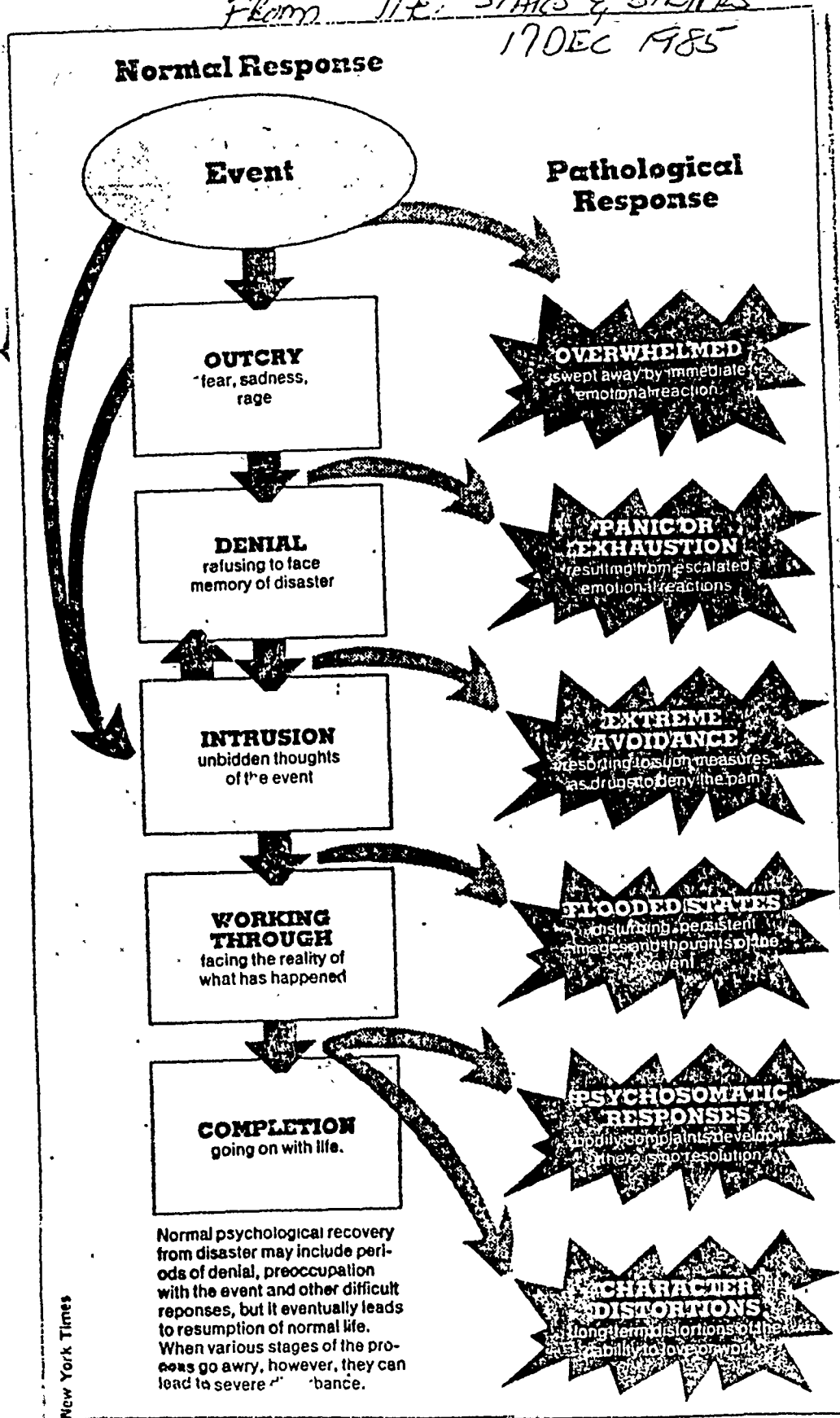
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Hijacking Overview



From THE STARS & STRIPES
17 DEC 1985



New York Times

UNITED STATES ARMY PHYSICAL FITNESS SCHOOL: TOWARDS THE 21ST CENTURY

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Physical fitness is of considerable importance within the Army. In 1981 a major Defense Department study (DOD, 1981) found that the military services could not accurately measure the fitness of its members, did not provide appropriate fitness programs to service members of all ages and occupational specialties, did not have adequate in-house physical fitness expertise, and did not incorporate then current physical fitness knowledge into their programs. This same study also encouraged the services to promote lifestyle changes while working to correct these problems. These recommendations resulted in the publication of several physical fitness regulations by the Army, the declaration of 1982 as the Army Year of Physical Fitness by the Army Chief of Staff, the organization by The Surgeon General of a task force on physical fitness, and the formation of the Army Physical Fitness Research Institute at Carlisle Barracks, Pennsylvania, and the US Army Physical Fitness School (USAPFS) at Fort Harrison, Indiana in 1982. All of these efforts were intended to improve the physical fitness level of American soldiers, thereby increasing their ability to successfully sustain operations on the modern, high-intensity battlefield.

MISSION

The US Army Physical Fitness School is the proponent agency for physical fitness in the United States Army. We are primarily responsible for developing physical fitness doctrine for the Army and for training soldiers as physical fitness specialists called Master Fitness Trainers (MFTs). Our mission is to develop the physical fitness of soldiers with the primary emphasis on preparing them to meet the physical demands of war.

ASSUMPTIONS AND VISION OF THE FUTURE

Throughout history man has attempted to improve and maximize the physical capabilities of the human body for a variety of reasons, including combat readiness, athletic competition, and basic survival. Regardless of future warfare concepts, doctrines, combat developments, or technological breakthroughs, the physical fitness of soldiers will remain as vital to military success in the future as it was to warriors of the past. However, while the human body will not change dramatically in the next 20 years, new environmental factors will have to be considered in order to achieve maximum physical performance.

In 1982 the Army recognized a need to train fitness specialists (Master Fitness Trainers) who would assist commanders in implementing current fitness doctrine in the field. Despite the fact that physical fitness doctrine is being slowly institutionalized throughout the force, history tells us that we must continue to sustain and upgrade this specialized training in order to promulgate technological and physiological breakthroughs as significant as in any other field.

In the last 20 years, there has been little improvement in the physical fitness levels of the American youth, despite a fitness "revolution" perceived by many. Unfortunately, very little is taking place within our nation's school system that will change this condition over the next 20 years. These statements are supported by the findings of the National Children and Youth Fitness Study (Public Health Service, 1985) and the results of the AAU/Nabisco Physical Fitness Program Annual Report of Results (Updyke, 1984). In other words, we will continue to face the challenge of developing, then sustaining, adequate fitness levels of soldiers.

As greater responsibility for combat readiness shifts to the Reserve Components (Army Reserve and National Guard) and as the perceived threat for war allows less time for mobilization, the total fitness of Reserve Component soldiers will become even more critical. Lifestyle changes among this population of approximately one million, which fairly well represents American society, must occur to insure more fit and healthier soldiers. Total fitness efforts focusing on exercise, diet, weight control, tobacco cessation, stress management, and substance abuse could be even more critical to part-time soldiers than to those in units who exercise regularly.

The Army must continue to emphasize the importance of effective physical training, and to investigate and field all possible methods of improving physical performance. Leaving the responsibility solely to commanders with little fitness knowledge has not worked well in the past, nor will it work in the future. The field is too complex. Our survival on the battlefield of the future demands this focused, specialized study and training.

DOCTRINE DEVELOPMENT

While the threat of armed conflict will drive particular exercise programs as specific scenarios develop, it will not dramatically alter fundamental fitness concepts and doctrine. The more fit soldier will perform better than the less fit soldier. Particular situations may dictate modification of the application of the principles of fitness as currently outlined in Army physical fitness training literature, but the principles themselves, which have scientific foundation, will not change. For example, operations in cold, mountainous terrain may require specific preparations (exposure and altitude) which differ from those for jungle or desert operations (heat and dehydration). However, soldiers will always have the need to endure physically and mentally to effectively handle combat stressors.

Although changes to military organizations, equipment, training, and doctrine may also alter the application of fitness principles in that they may dictate a different end point, the principles will not change. For instance, as exercise equipment technology evolves, the Army must maximize the application of these technologies to its training needs. Likewise, future research findings will undoubtedly drive changes in physical training concepts and techniques. While somewhat difficult to predict, some areas appear to merit investigation within the next 10 to 20 years.

Exercise equipment technology is evolving. It is likely that the Army will identify specific training needs, which may in turn spur the development of certain types of exercise equipment. For example, mechanization has reduced cardiorespiratory requirements, but increased the strength requirements. Since the Army offers a potentially lucrative market for equipment manufacturers, if

we identify the need for specific equipment, the industry should be responsive to our requirements.

We are also likely to see technological advances in performance enhancement aids such as dietary manipulations, cognitive strategies, and drugs. We may see advances in mood-altering drugs which retard the degradation of sleep loss upon performance. We have already participated in conferences concerning the possibility of stationing soldiers in space. In fact, a soldier was among the newest group of astronauts recently selected. If having soldiers stationed in space proves feasible, we will begin investigating the physical fitness needs of these soldiers sometime during the next 10 years.

Historically, fit soldiers have performed better on the battlefield than unfit soldiers. We have no reason to suspect that this relationship will change heading into the next century. In fact, the role of fitness will increase in importance during the continuous or sustained operation scenarios we expect to see. Future research may reveal relationships between certain components of physical fitness and a soldier's ability to cope with combat fatigue and exhaustion. Such research may prompt new and unique training strategies.

At the present time we cannot predict that a specific level (low, mid, high) of warfare intensity will have more or less impact on the physical demands placed on soldiers. The words low, mid, and high do not necessarily correlate with the maximum physical demands on individuals. Training strategies will be adjusted to meet the peculiarities of particular wartime scenarios. Again, the more fit soldier will still perform better.

Current air land battle doctrine, with increased emphasis on deep and rear operations, argues the case for increased levels of physical fitness. Deep operations will be arduous for front line soldiers. Soldiers in the rear, who have traditionally enjoyed a relative degree of security and inactivity, will, in the future, be required to exert the same effort as front-line troops and be called upon to perform many combat arms tasks. Physical fitness will be a key factor to every soldier's survivability. Frequent moves of both personnel and equipment during continuous operations with limited amounts of sleep will demonstrate why physical fitness is important in both areas (front and rear). Finally, the future emphasis on light forces, the stress of continuous operations, and recent lessons learned in Grenada, all reinforce the importance of physical fitness in the Army's future.

While we feel that the importance of adequate physical fitness on the operational and tactical levels is obvious, we also feel that it will have impact on the strategic level as well. Granted, while the job of a planner in a secure area may not be as physically demanding as that of soldiers in the field, the mental stress can be just as significant. There is limited evidence that higher fitness levels enable soldiers to perform better under stress. We will continue to emphasize that leaders and staff personnel must be physically fit, and we will field programs which will help them become fit and maintain their fitness.

The Army's mission through the 21st century will not diminish the importance of physical fitness; in fact, it may bring even more importance to an area that we have traditionally neglected.

COMBAT DEVELOPMENTS

While there may be new fitness equipment developed in the next ten years, that which is available at the present time is adequate for training the force. However, we propose the following study areas for consideration:

Lightening the soldier's load. The foot soldier in an extended engagement will likely find the weight of the equipment he must carry to be an important determinant of his endurance and success. His energy should be spent moving and fighting, not in carrying unrealistic loads. Unfortunately, it is not unusual to find "Light" Infantry soldiers prepared for a low-intensity, 48-hour operation to be carrying an average load of 145 pounds! While other Army agencies are working to reduce the weight and bulk of the load, we are initiating and continuing studies to examine the efficiency of various load-bearing training regimens. Specifically, we are currently investigating training strategies to help soldiers cope with the increasingly heavier loads that they are being required to carry.

Comprehensive examination of the effects of fatigue, caused by extended operations, upon level of performance. Continuous operations are defined as continuous combat with opportunities for sleep, though these opportunities may be brief and scattered throughout the day and night. Sustained operations are defined as continuous combat with no opportunity for sleep. Obviously performance deteriorates as a result of cumulative sleep loss and fatigue in these extended operations. The Army is currently developing and applying doctrine designed to minimize performance decrements by implementing the principles of good physical fitness. However, soldiers will not only be required to be in good physical condition, but specifically they will train selected muscle groups that are needed to carry out frequently repeated, physically demanding tasks. Practically speaking, soldiers will "train as they plan to fight." Thus, progressive load-bearing marches will be part of an infantry training program.

TRAINING

The US Army Physical Fitness School is responsible for training Master Fitness Trainers (MFTs). These soldiers, upon completion of a 4-week training course, return to their units as resident physical fitness training experts. Since current guidance recommends a Master Fitness Trainer for each battalion and company, we anticipate that the demand for MFTs will remain the same throughout the next ten years. We base this assumption on feedback from the field indicating the desire for MFTs at the company level and the tremendous demand for the course. If the size of our staff remains the same, we can continue to train 1100 MFTs per year. In the five years the Soldier Physical Fitness School has existed, we have trained approximately 4000 MFTs, both Active Component and Reserve Component. However, this does not even cover the approximately 3800 battalions and companies in the Active Component. We estimate that there are at least as many battalions and companies in the Reserve Component. With attrition and multiple assignments of MFTs to the same units (e.g., as many as ten in some Fitness Training Companies), we feel that the MFT Course will be viable well into the next century. (Fitness Training Companies were organized in 1985 at all Army Basic Training installations with the express purpose of reducing manpower losses due primarily to poor entry-level soldier physical fitness. Soldiers unable to meet minimum fitness standards upon entry at Reception Stations are placed in Fitness Companies. These companies provide soldiers with a fitness program specifically designed to elevate their fitness levels to a level necessary for entry into the regular basic training program.)

Another factor which argues for continuation of the MFT Course is evolving doctrine. As noted earlier, we expect that there will be changes in the subject matter taught to the MFTs. However, while we cannot accurately predict the exact nature of these changes at the present time, the MFT Course will continue as a conduit for keeping the field abreast of emerging doctrine.

As previously discussed we do not anticipate a significant change in our resident training workload. We are planning to test the idea of exporting some of our Reserve Component Course training this year. Reserve Component soldiers sometimes have difficulty traveling to Fort Harrison for the 2-week Reserve Component MFT Course. Cognizant of this fact, we recently conducted a very successful Reserve Component class at Fort Meade, Maryland for the Maryland National Guard. Since it was so well received we are looking forward to taking our Reserve Component Course to each of the five geographical Reserve Army areas next year in lieu of five resident courses at Fort Harrison. In addition, we plan to continue to conduct non-resident training for the Active Component a minimum of once a year in Korea and three times per year in Germany.

A void has been created by the elimination of the Military Occupational Specialty (MOS) 03C, Physical Activities Specialist. These individuals were responsible for installation physical fitness facility management. However, this MOS was eliminated to provide additional personnel allocations for the newly-created Light Infantry Division. Unfortunately, the impact of this action will be seen during the next 10 years. Consequently, we may be required to train civilian personnel to man the Army's extensive fitness facilities. (Although this concept is still very much in the planning stage, we envision a course for civilian fitness facility managers to teach them how to purchase and maintain equipment, provide guidance in designing fitness programs, as well as other tasks.)

Also, we do not envision an increase in the number of individual training products (publications, films, etc.). Rather, we plan periodic revision of information included in the Military Qualification Skills, as well as our various training support packages.

At this point in time, virtually every facet of the Army's physical fitness effort is covered by some publication (Physical Fitness Training, The Individual's Handbook on Physical Fitness, The Commander's Handbook on Physical Fitness, Family Fitness Handbook, You and the APFT, and a variety of training support packages). The training support packages will go throughout our Army's school system to embed our fitness doctrine at all grade levels, junior non-commissioned officers through senior grade officers. We have no plans for additional publications. However, we do plan periodic revisions of existing publications, most importantly Physical Fitness Training.

Aquatics is another training area which will involve the US Army Physical Fitness School. Until recently there was no Army agency assigned proponentcy for aquatics. However, we were recently tasked with this responsibility. We will coordinate this action closely with the Army Military Academy at West Point, which has the only full-time aquatics experts in the Army. Hopefully, we can lower the percentage of non-swimmers in the Army which, by the way, is estimated to be over 60%!

The US Army Physical Fitness School is also participating in the Soldier Support Center Interactive Video Disc (IVD) Pilot Program. The IVD program is intended to provide an exportable fitness package as a refresher/update for Master Fitness Trainers. Our first product is due out in February, 1988. We are currently evaluating the effectiveness of the IVD as a training medium prior to implementation.

Given the continued interest in a total fitness concept, we plan to have a computerized health-risk appraisal, with subsequent individual fitness program prescriptions. We anticipate periodic taskings in support of this effort.

We are also working on an Army-wide computer link-up which would enable all units to input, thereby creating a fitness data base. As a minimum, entries will include Army Physical Fitness Test (APFT) scores and fitness-related injuries.

Finally, we perceive a need to better educate medical personnel about sports medicine and sports injuries. While the positive profile system, which is used by the medical command to inform injured soldiers and their commanders of not only their physical limitations but also the exercises they can perform, is a step in the right direction; a void remains until personnel prescribing profiles understand, as a minimum, the exercises and training concepts espoused in the physical fitness training manual.

CONCLUSION

In summary, the mission of the United States Army Physical Fitness School is clear - elevate and maintain a high level of physical fitness among soldiers to accomplish wartime missions. This task must be accomplished within the realm of predicted budgetary constraints, unlimited and ever changing battlefield conditions, and future technological advances. With foresight, persistence, and outstanding leadership this challenge will be met. Fit to win.

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THE U.S. NAVY'S SPECIAL PSYCHIATRIC RAPID INTERVENTION TEAM

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It has been known for a long time that there are many traumatic events that cause immediate and long-term psychological problems. Two examples are the Buffalo Creek dam disaster and the collapse of the Hyatt Regency Hotel skywalk. There are a variety of situations which involve military personnel being exposed to dangerous situations. Some examples are ship collisions, aircraft accidents, fires, and explosions. An example of a collision at sea which resulted in distress to its survivors is the one between the USS Kennedy and the USS Belknap which occurred on November 22, 1975. There was loss of life and severe physical damage to the USS Belknap. I was a psychiatry resident at the Philadelphia Naval Hospital at the time of the collision and it was shortly thereafter that we saw Belknap crewmen coming into the clinic complaining of various psychological problems. Observations included the following psychological symptoms: depression, sleeplessness, poor concentration, intrusive thoughts about the accident. At the time it seemed to the psychiatry staff that something should be done to try to help these victims and a program should be developed to help victims of future accidents.

Another accident, this one involving the USS Guam and USS Trenton on January 17, 1977, again reinforced the idea that something needed to be done. In January 1977 the psychiatry staff at the Portsmouth Naval Hospital observed that the kinds of psychological problems generated by these military-related disasters were similar to those encountered by the battlefield soldier. It was hypothesized that the same kind of early intervention techniques that were successful in helping World I and II soldiers could be used to help disaster victims. Accordingly, a group called the Special Psychiatric Rapid Intervention Team was formed.

Since its beginning there have been a total of 14 deployments: 3 ship collisions and sinkings, 5 aircraft accidents, 2 terrorist incidents, 3 suicides, and 1 body recovery. By service, the interventions have been as follows: 11 Coast Guard, 2 Navy, 1 Marine. Ten of the interventions were at one site; the other four involved the SPRINT team(s) going to two or more sites. The length of interventions ranged from 5 to 46 days. SPRINT is now part of the Mobile Medical Augmentation Readiness Team (MMART), and is located at Navy hospitals at Portsmouth, Va., Great Lakes, Ill., and San Diego, Ca. SPRINT staff includes two psychiatrists, one psychologist, one chaplain, one psychiatric nurse, and four corpsmen.

SPRINT'S PHASES

I have divided the functions of SPRINT into six phases: preparation, pre-deployment, deployment, treatment, memorial services and debriefing.

PREPARATION PHASE

The preparation phase involved training in areas that the team might be called upon to provide services, such as post-traumatic stress disorder, combat psychiatry and bereavement. This is also the time they fostered group identity, clearly designating each team member's role, and put in place the needed administrative support, such as a method of recall, writing orders, arranging for transportation, etc.

PREDEPLOYMENT PHASE

After the team has been called to deploy, certain information about the catastrophe has been obtained. This included a description of the incident (intensity, duration, location), whether or not it was mission related, the type of incident (aviation, ship collision, etc.), the cause (act of God, man-made purposeful/non-purposeful), the amount of physical damage, and in the case of a ship its repairability, and an idea about the people involved, including the survivors, missing, dead, family, and rescuers.

While enroute to the scene the team has done additional planning and discussed how to deal with any misconceptions that may arise about SPRINT'S goals and methods.

DEPLOYMENT PHASE

The deployment phase included planning the intervention with the command. Meeting with the commanding officer, executive officer, department heads, medical staff, and chaplains has resulted in more effective intervention. Coordinating efforts with local resources (wives, clubs, religious organizations) has also been important. The goal has been to have SPRINT augment these resources and not try to compete with them.

TREATMENT SERVICES

The treatment phase of the intervention has included lectures to large groups of personnel at the command, smaller groups of 8 to 10 and sessions with individuals. Team members have also actively sought to make contact with high risk individuals, such as survivors, those that traded duty with the deceased, and wives of deceased. It has proved to be important to meet with the individuals in their environment. This included meeting with the active duty member at his work station and dependents at their homes. Two of the therapeutic goals have been the expression of feelings about the tragedy and to form and foster support groups. An important consideration for the intervention is the needs of the commanding and executive officers. It has often appeared that they were not in need of the help because they were trying to maintain a confident image to their men and thus appearing not to be in distress when in fact they were experiencing significant distress.

MEMORIAL SERVICES

The memorial services have often come at the end of intervention. The ceremony symbolically acknowledges past and future shared risks.

DEBRIEFING

At the end of the intervention there often has been a debriefing with command personnel to discuss various aspects of the intervention with an idea of what might be done to improve it in the future. It is also at this time that plans were made for follow-up for those individuals that need additional help.

Debriefing has also occurred within SPRINT itself, with the same issues discussed.

OBSERVATIONS

Several observations have been made regarding these interventions. Early intervention is important for success. If the team is not starting to work within about 24 to 72 hours of the incident, the opportunity to approach those involved seems to have been significantly reduced.

Anger is commonly expressed. There are many other emotions that are generated, including depressed feelings, but anger is common.

In the case of a ship that is completely destroyed or sunk, it has been observed that it seems to cause a loss of identity for the survivors. The reason for this is that the ship is the victim's workplace and abode, and is strongly symbolic of the military environment.

Survivor guilt is commonly seen for those that traded duty with any of the deceased and the wives of survivors also experience the same phenomena regarding their husbands. That is, in some cases the survivors' wives feel guilty that their husbands are alive. Another observation is that the wives of deceased have denied their husbands deaths, even when there was clear and convincing evidence that the serviceman was dead.

The catastrophe in some cases has resulted in the serviceman and his family seeing his own vulnerability and the inevitability of death.

SPRINT has tried to promote accurate communication within the command. Rumors about the cause of the accident and other things increase the distress of those involved. Promoting good communication has been seen as important for the resolution of the situation.

PSYCHOLOGICAL RESPONSES TO CRIMINAL VICTIMIZATIONS

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It has long been known that being subjected to a combat situation or being held hostage can produce severe and disabling psychological stress in an individual. However, in terms of the sheer numbers of persons affected yearly, one of the most common causes of psychological stress is criminal victimization or sexual assault. It is only recently that both civilian and military mental health professionals have begun to recognize the extent and severity of this problem. Individuals who have experienced these crimes often suffer from the most extreme form of psychological stress, post-traumatic stress disorder (PTSD). This paper will discuss the mental health consequences of sexual assault, particularly PTSD, and methods of treatment for victims of these crimes.

To date, only a few major centers in the country have attempted to investigate the psychological effects of sexual assault and other criminal victimization using well-designed and well-controlled studies. One of these centers, the Crime Victims Research and Treatment Center of the Department of Psychiatry and Behavioral Sciences at the Medical University of South Carolina, has conducted a series of four federally and privately-funded studies in this area. The results of these investigations have added greatly to our knowledge of crime-related stress disorders, and their findings will be discussed here. The first of these investigations, which was funded by the National Institute of Mental Health (NIMH), was a five-year longitudinal study to examine the long-term psychological effects of a sexual assault. Assessment data from victims of a completed rape were compared with data from control subjects who were matched on the variables of age, socioeconomic level, ethnic group, and neighborhood of residence. Both the victim and the matched control were assessed within six to twenty-one days following the assault. The assessment battery consisted of a variety of standard psychological assessment instruments as well as some instruments which had been developed specifically for use with rape victims. Following the initial assessment, both the victims and the control subjects were assessed at one month, two months, three months, six months, one year, eighteen months, two years, three years, and four years post-assault. At each assessment period, even four years post-assault, the scores for the victims of the sexual assault were significantly different from the scores for the non-victims. Victims of sexual assault appeared to have fairly significant levels of fear and anxiety, as well as problems with depression, sexual dysfunction, and phobic avoidance. This study clearly indicated that some victims of sexual assault, when compared to non-victims, do experience significant mental health problems as a result of the victimization and that these problems persist over time if left untreated. These research findings appear to be consistent with long-held clinical beliefs of the majority of mental health providers working in this area.

Since data from the first study had shown that being the victim of a sexual assault did produce in an individual long-term negative mental health consequences, a second study also funded by NIMH, investigated the incidence and prevalence of crime. In a random community survey, 2004 adult women were contacted and asked about a history of a sexual assault or other type of criminal victimization. Results of this study revealed that 100 women had been the victims of a forcible, completed rape at sometime during their lifetime. Additionally, 79 women had been victims of an attempted rape, 55 had been victims of molestation, 37 had been victims of attempted molestation and 19 women had experienced other types of sexual assaults. Data on the prevalence of other types of criminal victimization indicated that forty-eight women had been victims of an aggravated assault, 33 of an attempted robbery and 65 had been robbed. Altogether, 21% of adult women had been the victims of some type of crime with 14% being the victims of a type of sexual assault. When asking if they had ever suffered a "nervous breakdown" which is generally understood to mean a serious inability to cope and/or a serious disruption of normal adaptive behavior patterns, rates for victims of rape (16.0%) and attempted rape (8.9%) were greater than twice as high as the rate for non-victims (3.3%). With respect to having thought seriously of suicide, victims of completed rape (44.0%), attempted molestation (32.4%), attempted rape (29.1%), and completed molestation (21.8%) all had rates three to five times as high as non-victims (6.8%). With respect to a third question, had they ever made a suicide attempt, victims of rape (19%), victims of attempted rape (8.9%), and attempted molestation (8.1%) all had rates ranging from three to five times greater than the rate for non-victims (2.2%). Data regarding the timing of nervous breakdowns and suicide attempts indicated that the majority of problems were perceived by victims to have occurred after the victimization rather than before.

The most disturbing and startling finding of the study was the strong evidence that victimization was associated with negative mental health of victims and the vast majority of mental health problems were perceived by victims to come after the victimization experience. In particular, the finding that nearly one rape victim in five had attempted suicide and that this suicide attempt rate was 8.6 times higher than the rate for non-victims was extremely important. Suicide is by far the most serious and negative of all mental health consequences that a person can experience.

The third study was a more in-depth study and went beyond the limited number of mental health screening questions investigated in the previous research. Specifically, data was gathered on a host of specific psychological responses to sexual assault but the major emphasis of the study focused on the development of crime-related post-traumatic stress disorder. In this National Institute of Justice (NIJ)-funded study, victims who had participated in the second study were re-contacted and asked to complete a battery of psychological instruments and were interviewed about their mental health functioning by Ph.D. level psychologists. A slightly modified version of the Diagnostic Interview Schedule was used to determine objectively whether a respondent met the diagnostic criteria based upon the Diagnostic and Statistical Manual of Mental Disorders, 3rd edition, (DSM-III), for current and lifetime presence of several mental health disorders, including posttraumatic stress disorder (PTSD). (This study was initiated, although not completed, before the DSM-III-R was published. Therefore, to remain consistent, the DSM-III version was used.)

PTSD is defined as an anxiety disorder in which the essential feature is the development of an array of symptoms following and associated with a psychologically traumatic event which is generally outside the range of normal human experiences. Symptoms usually include reexperiencing the traumatic event, emotional numbing, and a variety of psychophysiological, emotional, or cognitive symptoms. The stressors that produce the syndrome would produce distress in almost anyone who experienced the event. The event may be experienced alone (rape) or with others (military combat). Stressors may include natural disasters (floods) or accidental man-made disasters (traffic accidents or fires), or deliberate man-made disasters (bombings, torture). Classic symptoms associated with this disorder include, but are not limited to "flashbacks," distressing dreams, hyperalertness, sleep disturbances, trouble concentrating, avoidance of activities that arouse recollections of the event, and intrusive thoughts of the event. The symptoms are typically severe and were not present before the traumatic event.

The results of the third study of 391 adult women using the more sophisticated interview survey procedure yielded the following results. Regarding lifetime prevalence, 75% of the sample of the 391 subjects had been victimized by crime. Specifically, 53% of the sample had been victims of at least one sexual assault, consisting of completed rape (23.3%), attempted rape (13.1%), completed molestation (18.4%), attempted molestation (4.6%), and other sexual assault (3.9%). Lifetime prevalence rates for other crimes were 9.7% for aggravated assault, 5.6% for robbery, and 45.3% for burglary.

Only 41.4% of all crimes were reported to police either by the victim or by someone other than the victim. Reporting rates varied substantially by crime type, with burglary having the highest reporting rate (82.4%) and sexual assault the lowest (7.1%).

The data on PTSD indicated both the percentage of respondents that had ever developed or were currently experiencing crime-related PTSD. As presented in Table 1, over one-quarter of all crime victims developed PTSD at some point after the crime. Lifetime prevalence rates were highest for completed rape (57.1%), aggravated assault (36.8%), completed molestation (33.3%), and burglary (28.2%). Current PTSD rates were highest for victims of completed rape (16.5%), aggravated assault (10.5%), and robbery (9.2%). Combining rates for all crime victims, 7.5% were experiencing PTSD at the time of assessment.

The most striking finding was the extremely high percentage of women who had been victimized. Over one-half of the women in this sample had been sexually assaulted at sometime during their lives. Moreover, nearly one-quarter of these women had been victims of one or more completed rapes. These sexual assault prevalence findings were consistent with those reported by other investigators. A second major finding was the extent of nonreporting. Over half of all crimes were never reported to the police and reporting rates were extremely low for sexual assaults. Another important finding was that crime had a persistent impact on the psychological functioning of many victims. About one-fourth of all victims developed the serious crime-related problem of PTSD after the crime, and 7.5% of all crime victims still had crime-related PTSD at the time of assessment.

A fourth study at the Crime Victims Research and Treatment Center funded by the Upjohn Pharmaceutical Company was a treatment outcome study to determine which treatment strategies may be beneficial for crime-related PTSD and/or other crime-related anxiety disorders. A rape-specific modified version of Meichenbaum's Stress Inoculation Training (SIT) was compared with a pharmacological treatment (Xanax) in a sample of non-recent, female crime victims. The final results have not been published to date, but preliminary inspection of the data suggests that the modified, crime-specific SIT package developed at the CVC is an effective treatment intervention for crime-related PTSD.

In summary, research has shown that the incidence of criminal victimization in the adult, female population is quite high while the rates of reporting for almost all types of criminal victimizations, particularly a completed sexual assault, are extremely low. A substantial proportion of crime victims experience long-term mental health problems including post-traumatic stress disorder. Effective cognitive-behavioral treatments for crime-related mental health problems exist. Therefore, it is important for mental health professionals to learn more about assessment and treatment of traumatized crime victims.

Table 1

Lifetime and Current Prevalence of Crime-Related Post-traumatic
Stress Disorder (PTSD) (in percentage)

| Crime Type | PTSD Lifetime Prevalence | PTSD Current Prevalence |
|-----------------------|-----------------------------|----------------------------|
| All Crimes | 27.8 | 7.5 |
| Completed Rape | 57.1 | 16.5 |
| Attempted Rape | 15.7 | 5.9 |
| Completed Molestation | 33.3 | 8.3 |
| Attempted Molestation | 11.1 | 0.0 |
| Other Sexual Assault | 20.0 | 6.7 |
| Aggravated Assault | 36.8 | 10.5 |
| Robbery | 18.2 | 9.2 |
| Burglary | 28.2 | 6.8 |

ACUTE STRESS REACTIONS: MILITARY PERSPECTIVES AND SUGGESTED INTERVENTION STRATEGIES

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Extensive documentation exists which describes the powerful negative psychological effects of combat on military and civilian populations. Both world wars and the recent engagements in Korea, Viet Nam and Lebanon clearly show that warfare is not only a physically and environmentally catastrophic event, but that it is devastating to the human psyche. Phobic reactions, intensified anxiety reactions, post-traumatic stress disorder (PTSD), severe depression, personality changes, alcoholism, marital discord and suicide have all been associated with war and its effects. Mental health practitioners should make every effort to prepare for the extraordinary impact of warfare on both military and civilian populations. However, they would be unwise to focus their efforts solely on the potential of war. Warfare is only one form of emotional trauma which can affect modern military personnel. In fact, it is a more remote possibility than a variety of other disturbing events.

Today, military forces worldwide encounter a host of events which are pivotal or "critical" events which have the potential of overwhelming the normal and generally effective coping abilities of armed forces personnel. The world has moved into an era of widespread terrorist style combat. The hit and run destruction tactics produce confusion and heightened anxiety in military forces. Armed services personnel are unsure of their elusive targets, have difficulty accomplishing retribution and feel more powerless to protect themselves and their loved ones.

Military personnel also encounter other critical incidents which can produce significant psychological distress for them. Examples of common occurrences which have the potential to distress today's military personnel are auto accidents which kill or seriously injure them, their loved ones or their fellow workers, significant training accidents, deaths to fellow personnel, hazardous materials incidents, death to innocent children, mass casualty incidents, prolonged threatening events, close brushes with death, and the destruction of their personal property.

In the past, personnel were frequently left to flounder through distressing incidents with virtually no support and guidance. Most were eventually able to recover from a critical incident. But few were able to recover without a struggle which distracted them from their duties, made them less efficient performers, and caused them to make more work related mistakes and even to injure themselves or others on the job. Some experienced strong feelings of anger, guilt, resentment, frustration, grief, and a reduced sense of self confidence. Marital or relationship discord frequently resulted as an aftershock of a critical incident on the job. Some personnel experienced changes in their personalities after a particularly distressing critical incident. Most were somewhat more vulnerable to experiencing a more profound distress if faced with a new critical incident when they had not been able to recover adequately from a prior critical incident because insufficient help was

available. Inadequate support after a critical incident may also contribute to premature attrition of military personnel out of the service.

Providing support does not mean an effort to "soften" military personnel so that they become unfit for the hardships of combat. It means instead that efforts are made to help healthy, effective personnel stay healthy and productive. Support services have the potential of enhancing combat readiness by helping personnel to maintain a healthier mental condition. The Israeli army has clearly demonstrated the positive effects of support services for military personnel with no detriment to their effectiveness as a combat force. In fact, the opposite is quite true. Israeli Defense Forces have experienced a dramatic reduction in psychiatric disturbances in combat forces by providing efficient and effective psychological support services after critical incidents (which include combat and non combat events). Rapid psychological intervention for normal people who are having normal reactions to critical incidents has assisted the Israeli Defense Forces in maintaining a high degree of combat readiness.

There are a number of steps which can be taken to lessen the impact of critical incidents on the personnel exposed to them. Pre incident training is one of the most important. Personnel need extensive tactical training which gives them a broad base of self confidence and a sense that they are well practiced for their specific jobs. However, training should not end when the technical and tactical elements have been presented. Stress management training which could help military personnel to recognize and reduce stress before it overwhelms them would assist them in maintaining a healthier overall outlook and a heightened sense of controlled alertness during periods of intense stress.

Rest and rotation of units is extremely important. The human mind and body can only tolerate limited amounts of intense stress before mistakes become prominent. Periodic breaks interrupt the upward spiral of stress symptoms and help personnel to withstand a critical situation for a longer total time than they could achieve if they are not relieved.

Personnel involved in a critical incident need food and water. Blood sugar drops dramatically during prolonged or severe stressful events. The consequences of low blood sugar are significant. Personnel cannot think clearly and are more prone to misinterpret information and make dangerous or inappropriate decisions.

The effects of excessive heat and cold on military personnel should also be of concern to command staff. As any military strategist knows, weather conditions have significantly influenced the performance of many armies. As is the case with inadequate food, personnel exposed to heat and cold may also make faulty decisions.

Medics, who are usually with the personnel in the midst of a critical incident, should be given special training in recognizing and intervening in stress reactions. Frequently brief and immediate field interventions can restore a healthy person to function far better than psychological services which are provided long after the event.

In many critical incidents, it may be necessary to provide family support services to the loved ones of military personnel. Taking care of the family members of the personnel increases the morale of the personnel and does much to help them stay alert to their more immediate circumstances.

One of the most helpful interventions for stress reduction after a critical incident had its origins in military services during the second world war. The process, which today is called a "Critical Incident Stress Debriefing" now has a specific structure. The process was formulated to mitigate the impact of a critical incident and to accelerate the recovery of personnel who had been exposed to the incident. The Critical Incident Stress Debriefing (CISD) process, which was developed by this author, has been through extensive development during the last fifteen years. It has been applied extensively to police, firefighters, emergency medical personnel, emergency nurses, dispatchers and is now finding its way back into military services. The CISD is reserved for extraordinary events (not necessarily large scale events) which overwhelm the usual abilities of personnel to cope adequately with stress.

The CISD depends on the combined skills of mental health professionals and peer support personnel who work in a partnership to restore a sense of order, understanding and hope where previously only chaos existed as a result of a critical incident. There are currently sixty teams of mental health and peer support personnel around the nation. Two thirds of the membership of a team (which usually has about 30 people) are peer support personnel and one third is mental health professionals. Teams provide pre-incident education on stress, on-scene support to individuals who are obviously distressed, group debriefings after a critical incident and a number of other important services.

The CISD begins with an introduction and an explanation from the team leader of the objectives of a debriefing as well as the basic ground rules which help the debriefing to be successful. It then eases into a discussion of the facts of the incident in which the personnel who were involved describe what happened. Next personnel describe their own thoughts about the situation. The discussion of their thoughts actually serves as a transition from the cognitive processes associated with the facts of the situation to the more emotional processes associated with their reactions to the event. The reaction phase of the debriefing is the heart of a debriefing. Once there has been adequate discussion of the reactions of the personnel to the incident, the CISD process begins to move gradually back toward the cognitive processes and away from the emotional processes. The movement back toward cognition is accomplished in two stages. The first of which is the symptom description phase. Symptoms which personnel experienced during, or shortly after the event are described. In addition the debriefers also encourage the personnel in the debriefing to describe any symptoms which may still exist at the time of the debriefing. Once symptom description is complete the CISD team moves into the next phase of the debriefing which is the teaching phase. In this phase the personnel are taught about the normalcy of their reactions and the fact that they are not unique. A good deal of information about stress reactions is presented and they are given specific suggestions which may help them to recover from the particular event which is now causing them distress. The seventh and last phase of a CISD is the re-entry phase. In this phase the personnel involved in the CISD may ask any questions, make any statements about the incident or about the CISD process. Summary statements are made by the CISD team members (usually four are deployed for a debriefing -- two mental health personnel and two peer support personnel).

Personnel are not required to speak during a debriefing if they do not want to. No notes, recordings or media personnel are ever allowed in the debriefing. Neither are command officers who were not directly involved in the incident. The CISD is not designed as a critique. No effort is made to find fault or to place blame. The whole CISD process is designed around a calm, non-threatening discussion of an awful event which had the power to cause a group to feel distressed. Ideally speaking, a debriefing is performed between twenty four and seventy two hours after an incident. But many debriefings have been successfully completed after several weeks. It is not recommended that a debriefing be delayed. After several months the debriefing loses its positive effects. (Maximum time after an incident that a debriefing should be provided is three months.) It is possible that it may actually do harm if delayed excessively. The best debriefings are very close to the actual event.

It is not necessary for command staff and mental health professionals to stand idly by while military personnel and subsequently their family members suffer unnecessarily as a result of intense stress reactions after critical incidents. Preplanning, minor variations in procedures during an event and an aggressive intervention program after a critical incident will support the personnel, mitigate the impact of stress on them and restore them to full service in a timely fashion. Psychological support services for personnel must be instituted for military personnel if they are to stay healthy and in a state of readiness for the demanding critical incidents of modern society.

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PREVENTION OF HEAT STRESS INJURY

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The Research Program in Combat Survival at the 352nd Evacuation Hospital in Oakland began in 1983 with the Commander's concern for the well being of personnel required to train in MOPP IV chemical defense ensemble. As most research was conducted on small samples and did not include female subjects, we focused our work on large samples of medical units training in aggregate.

Our initial work was to investigate biopsychological responses of troops wearing MOPP ensemble (Carter and Cammermeyer, 1985a). A second study documented the functioning of an entire medical unit during a simulated chemical defense warfare exercise (Carter and Cammermeyer, 1985b). This study showed how real casualties can emerge within the context of chemical warfare training. A third study explored human responses to simulated chemical warfare in two groups conducting training during morning and evening hours (Carter and Cammermeyer, unpublished). A current project evaluates effective and ineffective coping strategies in MOPP ensemble (Carter, in progress).

The study I am presenting was a phenomenology of heat injury conducted at Wounded Warrior II at Camp Roberts California, in June, 1985 (Carter and Cammermeyer, 1988). As prevention of heat injury furthers the medical command objective of "preserving the fighting strength," I will first present an overview of the research study itself and then discuss materials that were generated in part from the study that can be utilized at command and unit level heat briefings. I would like to acknowledge the former Commander of the 352nd Evacuation Hospital COL Heefner; COL Mc'endall, the present Commander; COL Cammermeyer, Chief Nurse and co-investigator; and research consultants Dr. W. Carole Chenitz and Dr. Judith Wrubel for their assistance.

METHOD

Purpose. This was a phenomenological study designed to investigate early warning signs of heat injury. The primary purpose was to identify features that can be easily recognized by non-medical personnel and to identify mental phenomena that are believed to precede physical signs.

Sample. Fifty-one United States Armed Forces personnel under evaluation for heat injury at the troop medical clinic comprised the sample. Patients with one or more signs of heat stress as indicated on the LHIC and/or those complaining of headache, dizziness, and nausea were included in the sample. Ambient temperature during this ten day field training exercised ranged between 90-102 degrees Fahrenheit.

Data Collection Instruments. A semi-structured interview guide was utilized to elicit data pertaining to health history, presenting problem, circumstances leading to the evaluation, and the subjective nature of the patient's experience. Mental status was assessed according to orientation to time,

memory, judgment, calculation, and problem solving ability. Vital signs and common physical signs of heat injury were recorded utilizing the Lehtmetts Heat Injury Checklist. Clinical records were reviewed to determine medical diagnosis and disposition.

Data Analysis. Interview material for each subject was read several times. From these readings certain elements emerged as significant and were defined for coding purposes. Data were entered on 3x5 cards for each subject. The 17 categories included: category disease (heat/non-heat, exercise day of symptoms, number TMC visits, heat injury history, ambient temperature, mental status, type of error items and total error), Lehtmetts (each type of symptom and total symptoms), diagnosis, referral, disposition, sex, onset (acute or delayed), patient's sense of problem (symptoms, situation, and both), mental change (affective, change in alertness without confusion, cognitive confusion, and no features).

After each case had been reviewed several times using the 3x5 cards, data were entered on the PFS File and Report programs using an IBM PC. Computerized spread sheets were then generated which were used to visualize similarities and differences across categories.

Cases were separated into heat and non-heat diagnostic categories. Confusion emerged as the predominant sign in the heat injured group. Heat cases with confusion were then reviewed for similarities and differences. The entire data set for this group was reviewed, including computerized spread sheets. Case excerpts were selected which illustrate salient aspects of confusion as a predominant early sign.

FINDINGS

Twenty-six subjects were diagnosed by TMC physicians with heat injury. Several features characterized the heat injury group from the non-heat group. Heat cases tended to occur in waves and peak on days when the ambient temperature was rising. In contrast the non-heat cases occurred mid-point or during the latter half of the field training exercise. The heat group was characterized by an acute onset of symptoms (6 hours). Heat cases tended to be brought for medical treatment by others whereas non-heat cases were self referred. All patients with a prior history of heat injury were in the heat injured group. Most of the cases (9 out of 11) making multiple visits to the TMC were in the heat injured group. The tendency was for the acute heat injured to be treated more aggressively (i.e. to be hospitalized in the TMC overnight and for the acute non-heat cases to be quartered).

A major finding of the study is that on interview over half of the heat injured subjects described their problem in such a way as to be coded cognitive confusion. Most of these patients were not confused at the time of the interview but described confusional episodes leading to the TMC evaluation. Both heat and non-heat cases showed symptoms of heat injury on the LHIC. The heat injured group showed 30% more symptoms on the LHIC. Both heat and non-heat subjects showed impairment in attention, delayed memory, situational judgment, and complex calculation on the SAMS. The heat injured group had slightly more difficulty on complex calculation.

Many of the heat injured individuals presented a vivid description of their problem in terms of a breakdown in the person-environment transaction. In addition to reporting physical symptoms, they described changes in cognitive and affective functioning, and a discontinuity in the ability to work and relate to others. The following cases illustrate salient aspects of confusion as it emerged in the heat injured.

Case #1 showed confusion as a primary symptom: a vague mix of confusion and irritability. This individual was found walking along the road enroute to garrison. She was confused and unsure why she was brought to the TMC. She requested to talk with the chaplain because "she did not feel a part of the unit." She felt "hurt" and upset because she was not allowed enough time to eat. In the absence of psychiatric history, this individual was diagnosed with heat injury and admitted.

Case #2 presented a retrospective description of an episode of confusion: This individual was attending a class in the theatre and stated, "I could feel myself getting hotter and hotter. I poured water on myself. I got dazed and sluggish. Just before I went outside I felt my pulse go up. I didn't care what the speaker was saying, could not react to anything around me. I just dulled out. Things around me became sort of inappropriate. I went outside and poured water on my head."

Case #3 represented recurrent episodes of confusion in those appearing well. This individual was referred to the TMC by others and returned to duty after the first three visits. He was able to relate current symptoms to a recurrence of heat injury yet managed to evade treatment. On the third visit he described: "I felt light headed and tingling in my arms. People were talking but I didn't understand what they were saying. My head gets lighter and I just go out. Today I don't know if I went out or not. Things got confused. This has happened before...I didn't want to come here today." This individual's enthusiasm for returning to duty and his annoyance at being at the TMC appeared to mask the need for medical care. After a fourth visit, the individual was placed on quarters.

Case #4 underestimating effects of heat injury: A case without confusion. Some individuals described circumstances which illustrate difficulty in re-integration with the unit after being treated for heat injury. This individual stated, "I felt freaked out. I didn't do much the first couple of days. I was sweaty and had chills. It was like there was nothing in my body. I wasn't responding to activities like my buddies. I started crying. I told my Lieutenant that this wasn't healthy and he laughed. He told the Captain and they both laughed. I was concerned about hypothermia. They both laughed. My body let me down... the black spots come and go even now." This patient went on to discuss the personal meaning he attached to the situation. He was deeply disturbed that his body had failed him and that his superiors found humor in his apparent weakness. This individual was admitted after the interview and diagnosed with recurrent heat injury.

IMPLICATIONS AND RECOMMENDATIONS

This study demonstrates the illusive nature of heat injury. According to subject reports, the manifestations of heat injury appear to wax and wane in intensity. Heat stress symptoms may present as a mix with other medical symptoms that may complicate assessment. The subjects' inability to assess their own condition and/or ability to convince others of their needs may preclude intervention until subjects become acutely ill. On examination patients with heat injury may appear more well than they actually are. Those who return to duty prematurely may risk recurrence of heat injury. The response of unit personnel may potentiate recurrence of heat injury and may damage the esteem of the injured individual.

Preventive measures in high heat environments should include adequate food and fluid intake, rest, and minimal exposure to direct sunlight. Individuals with heat injury history should be given preferential assignments which include light work loads. Personnel should be trained to recognize confusion, changes in affect, and impaired ability to function in the work environment as early signs of heat injury. All personnel should be trained in observation and buddy care while working in heat stress environments. Readers are encouraged to use heat stress briefing materials that were generated in part from this study and appear in the Appendix of this text.

Recommendations for further research include:

1. establishing validity of the SAMS tool under different climatic and field conditions.
2. describing salient aspects of early heat injury.
3. attempting to identify phenomena that are predictive of heat injury.

APPENDIX

HEAT STRESS BRIEFING

Research conducted at Camp Roberts California in June 1985 showed the following early features of heat injury (Carter and Cammermeyer, 1988):

1. Acute onset of symptoms (became ill over about six hours).
2. Soldiers were unable to recognize their own illness.
3. Soldiers being evaluated for heat injury who had a history of heat injury were diagnosed with heat injury.
4. Soldiers showed an impaired ability to work and function appropriately in the environment.
5. Heat cases tended to occur on days of increasing environmental temperature.
6. ON INTERVIEW: heat cases described episodes of confusion and changes in affect as aspects of early heat injury. (See examples of soldiers statements below).

SOLDIERS' STATEMENTS INDICATING CONFUSION:

"faded in and out of consciousness"
"I don't know where I was, I couldn't answer questions"
"I awoke foggy, disoriented, drunk, wouldn't have know the time"
"I didn't remember anything for 40 minutes. Felt like a freak"
"I became dazed and sluggish, didn't care about what the speaker was saying"
"things around me became sort of inappropriate"
"I don't know, I just remember sitting in the truck"
"I can't keep a thought in my head, forget instructions"
"I can't remember anything. I've been confused"
"I was confused, really confused"
"was confused for about 30 minutes"
"I just wasn't all there, thinking was fuzzy"
"I was disoriented, couldn't remember where I was" "couldn't think clearly, couldn't concentrate"

SOLDIERS' STATEMENTS INDICATING CHANGES IN AFFECT:

"felt like crying"
"job made me nervous"
"I'm angry about the food"
"I'm frustrated. too much stress"
"I got agitated and irritable"
"was in a panic"
"I got irritable, felt like yelling"
"I'm short tempered"
"can't take it, feel pissed"
"I was dulled out"
"I felt like crying"
"nervous"
"angry at poor care"
"upset because of work"
"I was becoming a real comedian"
"I stay in good shape. can't believe this happened to me"

PRINCIPLES OF PREVENTION

1. COMMAND SUPPORT IS CRITICAL. Commanders are ultimately responsible if soldiers become heat injured.
2. Section leaders should observe troops for early signs.
3. Buddies should watch each other for early signs.
4. All troops should carry in pocket Department of the Army GTA 8-5-45 list of physical heat injury symptoms.
5. Practice self-knowledge, know limits, and medical history.
6. Practice reasonable work rest cycles.
7. Eat meals, salt substitute is not given because sodium is included in dietary provisions.
8. Drink 3-15 quarts of fluids per day. Drink all day. Commanders may provide guidelines regarding fluid intake. Thirst is not enough to inform you of fluid requirements in high heat environments.
9. Decrease direct exposure to the sun.

10. Work in ventilated areas when possible.
11. Individuals with a history of heat injury should inform section leaders. Precautions should be used in making work assignments.
12. Avoid use of alcohol and caffeine which cause dehydration.
13. Individuals who take diuretics ("water pills") and antihypertensive ("blood pressure") medication should consult with a physician regarding use in high heat environments.
14. If you are ill and/or taking medications you are increasingly susceptible to heat injury.

TRIAGE

1. Triage should occur from individual and/or buddy to section leader, heat officer if so designated by unit, and lastly to medical facility. (Any avenue to the medical facility is appropriate in an EMERGENCY).
2. Heat injured individuals should return to duty from the medical facility, to unit heat officer, to section leader, to duty or quarters.

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THE 467TH MEDICAL DETACHMENT

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The 467th Medical Detachment currently has 42 positions or slots. We have four psychiatrist slots which include, one for the Commander. Currently, three of our psychiatrist slots are vacant. We have one Ph.D. psychologist slot which is also vacant. We have six M.S.W. Social Work officers, and all of these slots are currently filled. Finally, in the officer ranks, we have two psychiatric nurse positions which are currently filled, and a 67H, Administrative Officer, which is also filled. In the enlisted ranks, we have approximately 11 91Gs (Behavior Science Specialist) and about the same number of 91Fs, all of whom are M.O.S. qualified and most of whom have Master's Degrees in either Social Work or Psychology. Seven of the 91Gs have Master's Degrees in Social Work. One of the 91Fs has a Ph.D. in Educational Psychology and another has a Master's Degree in Psychology. We recently lost two Vietnam Vets, one of whom had a Master's Degree in Social Work and another who had a Master's Degree in Psychology. Both were 91Fs. Currently, we have two E-7 Vietnam Vets remaining in the unit. The 91F, Master's Degree Social Work, did two tours in Vietnam and was removed from the service as the result of being unable to keep his weight under control.

The balance of our unit involves primarily non-MOS trained young college students who either need to go to basic training or have been to basic training and still have not been to AIT. We are having some difficulty assimilating this young group of approximately 10 to 15 with our older group, most of whom are 35 and older. Efforts are being made to assimilate this group; however, this is difficult as they do not attend annual training with us, as it interferes with their school year.

Our unit constellation is broken into three treatment OM teams, and one psychiatric team, as well as the headquarters personnel. We attempt to conduct our training in relation to how we are broken up into teams upon being called to active duty. Each morning the four teams, less the officers, conduct MOS skill training while the officers conduct professional training. During the balance of the training day, all of the unit personnel are trained in common tasks and NBC exercises. Over recent years, there has been emphasis on training in common tasks and NBC tasks as opposed to MOS tasks, as it is anticipated that individuals will need good soldier skills to survive before they can utilize their MOS skills. Also, since our unit is highly trained and functions in MOS related jobs as civilians, there is more need for common task training. We have utilized the "paper scenarios" provided by Colonel Stokes for some of our MOS collective training. The bulk of our MOS and common task collective training is done at the Saturday drill each month. On Sunday, most of the enlisted and some of the officers participate in on-the-job training (OJT) viewing and staffing patients at the Veterans Administration Hospital. We are currently in the process of changing our OJT site to a county home where we will have a greater variety of psychiatric patients for our enlisted people to observe and train with.

During the weekend drills MAJ Evans functions as the executive officer, MAJ Lang functions as the capstone officer and assistant training officer, and I function as training officer. During annual training, MAJ Evans continues as the executive officer and I function as the Chief of Social Services for all of the Social Work officers and 91Gs.

We conduct our weekend training on Saturdays and Sundays once per month, and we generally participate in two FTXs per year with the 44th General Hospital, our higher peacetime headquarters. We usually go to annual training in February and have most frequently gone to Fitzsimons Medical Center in Denver, Colorado and Fort Sam Houston, San Antonio, Texas. We have done annual training at Eisenhower Medical Center, Augusta, Georgia; Fort Bliss, El Paso, Texas; and Letterman at San Francisco, California.

Some of the problems we are concerned with include (1) the fact that we have a chain of command for peacetime which is different than the chain of command we will be experiencing with the capstone units, during mobilization. Unfamiliarity with these units, lack of communication, and lack of annual training with them contributes to this. (2) Our AGR's are often not from our unit and, therefore, there is a lack of loyalty and cohesion with the unit, as well as a lack of command and control, as these individuals are often under daily control of the peacetime headquarters, in this case the 44th General Hospital. (3) There is frequently uncertainty about getting orders until the last minute for training exercises, additional duty training, and exercises such as the one we are at. This causes a loss of interest and enthusiasm, frequently creates problems with employers when individuals make last minute requests, and destroys morale. These exercises should be made available with approval well in advance for alternate A.T. for those that are interested. (4) There are a large number of administrative functions that each of us has to conduct during weekend duty, which keeps us from training on things that are important to unit survival in the event of mobilization. (5) We have few or no meetings with other neuropsych detachments and could benefit from cross training with these detachments at annual training. (6) Our young-lower enlisted are not cohesive with the unit due to not going to annual training. This is an ongoing problem; it is not likely to be resolved. (7) There is a need for more neuropsychiatric exercises, particularly those that are similar to those that the 86th M.A.C. performed in 1986. This was the best training I ever experienced, as well as the training that I did at Fort McCoy one year when I participated as a Social Work Officer at the troop medical clinic. I saw approximately 10 patients who had varying problems from anxiety reactions to malingering. (8) Finally, I believe that Social Work needs to develop a role for support of Aids patients who are being counseled after they are identified as H.I.V. positive. The Army has given the clergy a role in this and excluded social work to date. Neuropsych detachments could play an active role in plugging H.I.V. positive individuals into support groups and community resources.

MAJ Evans, MAJ Lang, and I have 18 years, 18 years, and 16 years, respectively in the reserves. We feel that our duties are challenging and we appreciate the support as well as guidance that COL Stokes has provided us through his activities at Health Services Command.

THE 785th MEDICAL DETACHMENT (PSY)
"The unit with no agenda...fighting a hidden enemy"

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This paper will describe the experiences of a U.S. Army Reserve Psychiatric OM Team performing its ARTEP mission during a two week annual training field exercise (MEDIX 87) at Ft. Mc Coy, Wisconsin during the time period 8-22 August, 1987. The psychiatric OM team consisted of an eight person increment of the 785th Medical Detachment (Psy) from Ft. Snelling, Minnesota. The 785th Medical Detachment was part of the 81st Med Group whose mission was to provide brigade level medical support to include hospitalization, evacuation, preventive medicine, and environmental services to elements of the 205th Infantry Brigade and COSTAR support units. (There were approximately 5,000 troops involved in this exercise.) The 785th Medical Detachment was attached (for purposes of logistical support) to the 73rd Combat Support Hospital located in Cedar Rapids, Iowa. Before reviewing the training experience of the 785th Med Det (Psy) during this exercise, it would be appropriate to review briefly the history of this unit from inception in 1978 to the development and testing of mission readiness in a two week field exercise.

BACKGROUND ON THE 785TH MED DET (PSY)

The 785th Medical Detachment (PSY) is a unique organization within the Army Reserve system. Our mission is to provide psychiatric support to the soldier in a combat theater of operations. The Army believes that, given a conventional armed conflict, we can expect between 25 to 45% psychiatric casualties. The Army has also taken the position that one of the main sources of re-supplying manpower to the combat area will be the return of the psychiatric casualty to combat. Given these facts, it is interesting to note that there are only six units in the Army Reserves whose mission is to treat combat psychiatric casualties. Currently, there are no active duty units tasked with a similar mission.

The 785th Med Det (PSY) was organized in early 1978. The Army recognized the need to expand its already limited ability to treat combat stress and also the fact that the 5501st U.S. Army Hospital (based at Fort Snelling, Minnesota) had an excess number of MOS trained personnel that would be needed for this type of unit. The unit began with twelve soldiers, four officers and eight enlisted. Our MTOE calls for 48 people: 15 officers and 33 enlisted. During the last ten years, the 785th has been able to recruit and/or retain people until today we are at 90% of strength.

The manning table calls for five psychiatrists, six social work officers, a psychologist, two psychiatric nurses, and an administrative officer. The manning table for enlisted personnel calls for an E7 psychiatric wardmaster, three E7 behavioral science NCOs, three E6 behavioral science NCOs, 10 psychiatric specialists, 13 behavioral science specialists, two administrative specialists, and a supply sergeant. We are a field unit with our own tentage, vehicles, weapons, field gear, and NBC detection apparatus.

In the theater of operations, the 785th would be attached to a Combat Support Hospital or Medical Clearing Company. Our unit would be deployed in three areas: Corps rear, Division rear, and the Brigade Maneuver Area. The deployment would be by teams which would provide preventive consultation and reconditioning support to maneuver units, neuropsychiatric triage, and stabilization of battle fatigue and neuropsychiatric casualties in the theater.

The unit has evolved over the years from a small group of mental health professionals (all prior service) who had a disdain for performing their mission in a field environment, to a unit at nearly 100% of strength that looks forward to any opportunity to train on MOS skills in a field setting. Given the nature of our mission, the 785th Med Det (PSY) has attracted soldiers with a high degree of education and professional background. Almost 80% of the unit is currently working on or has completed college degree programs. Many of our members are high achievers and the Army's standard training procedures often do not meet their intellectual needs. At the same time, the MOS training they have received while on active duty (91G experiences in a hospital setting) and in garrison at Fort Snelling (classroom training) did not prepare them fully to perform their unit mission. Unit leaders have continually addressed this training challenge over the years with varying degrees of success. During the early years, more emphasis was placed on professional MOS training and less on common soldier task training. The behavioral science MOS training in the classroom was supplanted with community service work during drill weekends. Unit members would staff a community mental health aftercare facility providing clients with socialization and recreation therapy. Other examples of community service work included staffing a county psychiatric crisis intervention center and a rape/sexual assault hot line.

Because of the relatively large numbers of people in specific MOSs/SSIs in this unit, annual training exercises were often held at large Army Medical Training Centers. The unit was sent to Fort Sam Houston during the time period 1979 - 1982. From 1983 through 1987, the 785th drew the difficult assignment of the Presidio in San Francisco. While we enjoyed visiting San Francisco in March, providing discharge planning services for retired personnel at LAMC was not preparing us for treating battle fatigue casualties in a field environment. The field training we did receive was limited to one weekend FTX held during the fall of the year. In the early years, these exercises were held literally in our own back yard. We would practice setting up our tentage and practice a simulated mass casualty exercise with "paper patients" using our own unit members as simulated psychiatric cases. Unit members noticed that unit morale and esprit de corps were often at the high points during this one weekend of the year. Gradually our unit moved out of our area and began conducting these weekend FTXs with other units. For example, one year we joined with the 477th ambulance company from Duluth, Minnesota, to engage in a two day field training exercise in the Brule National Forest in Wisconsin. These FTXs with units that had more field experience allowed us to provide more realistic combat soldier task training. The field environment also allowed us, to some degree, to test our mobilization mission.

While we were developing our field training skills, we were also developing in garrison a second critical component of the psychiatric OM unit's mission: that of a "field component command consultation program." This is an especially critical function for a psychiatric OM unit in peacetime. In the 785th Med Det (PSY), we have formed a command consultation team, consisting of a psychiatrist, social work officers, and behavioral science specialists. Command consultation

at Fort Snelling, Minnesota is provided by the 785th to units of the 88th ARCOM. Under this parent organization are included the 205th Infantry Brigade and the 5501st U.S. Army Hospital. Both have multiple attached units including the 73rd CSH located in Cedar Rapids, Iowa. These organizations are dependent on the 785th for mental health support services. Over the past two to three years, we have been developing this command consultation program. The functions of this team have varied. We have been active in several areas to include routine psychiatric evaluations. In addition, we are available to help local commanders with acute personnel problems. Initial and continued promotion of this program was done through Letters of Information to all units in the 88th ARCOM. Individual contact to commanders and first sergeants is emphasized with briefings on the advantages of stress management principles as a useful interpersonal management tool. We have attempted to provide each command with a new way of looking at poorly functioning soldiers; not just as malingerers, but as disabled soldiers. In spite of our work in this area, we have yet to implement fully this command consultation mission. Our biggest drawback has been "getting the word out" on who we are and encouraging commanders to look at us as a valuable medical asset to their unit. We would find that this would be our greatest challenge while participating in MEDEX 87.

In 1985, after several off-site FTXs, the 785th began to further delineate its training needs. A decision was made that if our focus was to become broad enough to incorporate all of our mandatory training objectives, an Army Training and Evaluation Program (ARTEP) would be needed. The Army creates ARTEPs for company size units or larger. As a detachment, no ARTEP existed for our unit. The creation of an ARTEP proved to be an exciting challenge as its development moved us one step closer to mission readiness. During the last two years, several unit members attended the Dusty Bull and Wounded Warrior exercises. While there, it was learned that a major shift in Army combat psychiatry was being considered. Under the direction of COL James W. Stokes, MC and LTC Timothy D. Sheehan, MC from the Academy of Health Sciences at Fort Sam Houston, Texas, the concept of a highly mobile "Combat Stress Control Platoon" has evolved. Its historical basis is the presently organized OM units like the 785th Med Det (PSY), deployed in the Reserve system. The CSC concept calls for corps-level CSC units (the companies and detachments) to be composed of modular teams or squads of mental health officers and NCOs. These four-person or eight-person modules deploy forward and attach to Level II medical treatment facilities (clearing companies) in the maneuver brigades, division rear, and corps areas. From there, they provide preventive consultation and reconditioning support to maneuver units, neuropsychiatric triage and stabilization of battle fatigue and neuropsychiatric casualties. The MEDEX 87 exercise presented the opportunity for the 785th to send an eight to twelve person team into the field to see first hand how a CSC squad might operate in a "simulated battlefield setting."

The MEDEX 87 exercise proved an invaluable training experience for testing the readiness posture of the 785th and for validating the need for the combat stress control platoon concept as it is currently being discussed within the overall Health Services Air Land Battle concept (HSSAB). The 785th Medical Detachment (PSY) has now embarked upon a five year training plan with the first priority being field deployed MHCS training in increments to test team integrity and continue development of the CSC concept. The second training priority will be continued development of MOS specialized, professional skills in MEDCENS with the Mental Hygiene teams alternating between these two activities.

THE 531st MEDICAL DETACHMENT

Ernest E. Law
CPT, MS, USAR
Baltimore, Maryland

The 531st Medical Detachment (psychiatric) has as its main purpose the training of its members in the provision of Psychiatric Treatment and Mental Hygiene consultation services in combat situations where units of less than company size are required.

The 531st Med Det (Psych) mission is to provide (1) Psychiatric Treatment through the establishment and operation of a twenty-five bed treatment facility and (2) Mental Hygiene and Consultation Services through the deployment of three Mental Hygiene teams to forward areas for assessment, treatment and consultation activities with soldiers and commanders.

The Capstone Mission, according to our Capstone Trace, is to provide psychiatric support to the U.S. 7th Corps with emphasis on treatment of Combat Stress Syndrome.

The unit trains monthly to be proficient in its ability to provide psychiatric treatment and mental hygiene consultation and services to a medical command or brigade as assigned in a combat situation. We attempt to accomplish our training objective in our mission essential tasks as listed on our METL in either sustainment training or training to the projected FTXs for TY88. Our regular IDT will consist of a focus on clinical (MOS specialty) training at Walter Reed Army Medical Center and Unit tactical (field) proficiency training at either Turner USARC or Fort Meade, Maryland.

Two IDTs will be MUTA-5 Field Training exercise at Fort Meade in March 1988 and August 1988. The Field Training Exercise will focus on field survival skills, tactical skills and emergency medical care skills.

In the past three years (1984-85-86), as a unit we have found it highly beneficial sharing in some of the most realistic training for a medical psychiatric unit.

In 1984 we mobilized and convoyed from Home Base to Fort Bragg, North Carolina, where we were involved in a five day Field Training Exercise.

In 1985 we again mobilized and convoyed to Fort Bragg, North Carolina and again involved ourselves in a six day Field Training Exercise. However, before we reached Fort Bragg there was a big accident involving a number of cars with many people hurt. Our unit vehicles were not involved in the accident, but our unit personnel did assist the accident victims until we were relieved by the State of North Carolina's Emergency Unit and its State Police. The unit received a commendable write-up from the State of North Carolina.

In 1986 the unit was in Camp Shelby, Mississippi where we participated in a large MEDEX, MEDEX 86. To this unit, the above three exercises were realistic training because the unit was able to practice and improve upon its field survival skills, tactical skills, and its emergency medical care skills.

The unit also had the opportunity to operate as an OM team providing combat medical care to troops with combat stress syndrome (battle fatigue); a most rewarding experience.

The unit is scheduled for AT at Tripler Army Medical Center (TAMC), Hawaii 18 June - 2 July 1988.

CONCEPT OF TRAINING

The 531st Medical Detachment would be part of a pilot training program designed to improve the combat readiness of Psychiatric OM teams throughout the Reserve Component. A parallel training program is being developed whereby the OM team will be integrated with active component personnel assigned to TAMC (Department of Psychiatry) to undergo intensive common soldier skill training in a field environment as well as professional training using the full facilities of TAMC.

Hawaii is an ideal location for the proposed training due to the close proximity of TAMC with Schofield Barracks, where the 25th Light Infantry Division (LID) is stationed. First, TAMC is one of only four US Army Hospitals that conducts postgraduate psychiatric residency training with a specific mission to teach combat psychiatry. Second, the 25th LID with its organic medical battalion offers superb training facilities together with the essential resources and expertise necessary for MOS and common soldier task training.

The opportunity to integrate key elements of an active duty psychiatry organization (TDA) with a similar reserve (TOE) unit provides an ideal training environment that will unquestionably enhance combat readiness of those organizations that participate.

Additionally, the training period will provide essential input into the programmed development of a Combat Stress Control Company ARTEP and will be a positive contributing factor for future recruiting and retention.

The unit's Capstone Mission capabilities will be greatly enhanced through this type of training in either setting, providing (1) psychiatric treatment through the establishment and operation of a twenty-five bed treatment facility and (2) mental hygiene and consultation services through deployment of three Mental Hygiene teams to forward areas for assessment, treatment, and consultation activities with soldiers and commanders. This unit will request an external ARTEP to be conducted during Annual Training (AT) 88.

THE 383D MEDICAL DETACHMENT

LTC William T. Noonan
383d Medical Detachment (Psychology)
Boston, Massachusetts 02210

A brief history of the 383d Medical Detachment (Psy) follows.

LTC William T. Noonan assumed command of the 383d Medical Detachment (Psy) in June, 1987.

The 383d attended annual training at Gagetown, Canada, from 7 to 22 August, 1987. The 383d was attached to the 376th CSH. The 383d provided a psychiatric inpatient facility and a psychiatric liaison for the 187th Infantry. Clinical training included a battlefield fatigue presentation by MAJ Cahil in August, 1987 and a combat stress briefing by MAJ Cahill during October, 1987.

During 1987, the 383d sent LTC Noonan and MAJ Cahill to the Sixth Users' Workshop on Combat Stress at Fort Sam Houston, Texas during 30 November to 2 December. The unit sent CPT Leonard, CPT Moriarty, and CPT Tuohey to the AMEDD Combat Psychiatry course at Fort Snelling, Minnesota in March, 1988. CPT Moriarty and CPT Tuohey made presentations at the Fort Snelling course.

Margaret Carson was recruited by the 383d to present her research on stress and cardiac risk factors. Margaret Carson is a civilian researcher.

Starting in October, 1987, the 383d established satellites at Bournemouth Hospital and at Lemuel Shattuck Hospital. This arrangement with two private psychiatric hospitals provides actual, practical, psychiatric experience for 383d enlisted members one day per month.

The goal and intention of the 383d Medical Detachment is to include clinical issues in training whenever possible and to send 383d members to clinical courses whenever funding and scheduling allow.

THE 55th MEDICAL DETACHMENT (PSYCHIATRIC)

Connie J. Boatright, MAJ, AN
Training Officer
55th Medical Detachment (Psychiatric)
Ft. Benjamin Harrison, IN

Having originated in Dayton, Ohio, the 55th Medical Detachment relocated at Indianapolis, Indiana, where it set up Headquarters at Building 126, (U.S. Army Reserve Center at Ft. Benjamin Harrison, Indiana) in 1978.

For a few years, the 55th relied heavily on the 337th General Hospital (higher headquarters) for its support in many areas, e.g., finance, supply and logistics, motor pool, a portion of its training (including being attached to the 337th for Annual Training and food service). For the past several years, the 55th has basically functioned as an independent unit. This includes managing its own training, logistics, supply, personnel, finance, and motor pool. Obviously, this requires extensive cross-training for most of the unit members.

During monthly MUTAs, the 55th converges on the Richard R. Roudebush Veterans Administration Medical Center, Indianapolis, Indiana. Since the unit has a sharing agreement with this facility and its psychiatry service, the unit members have the opportunity to receive hands-on training with patients who are outpatients of the Mental Hygiene Clinic or inpatients in the acute psychiatric service. Performing intakes, doing psycho-social assessments, administering psychological testing and assisting with "routine" care of the psychiatric patient comprise much of the hands-on experience. This training affords the soldiers the opportunity to practice the skills compatible with their respective MOSs as well as apply information learned during on-going classroom training. At the end of the working day, the unit gathers to hear, learn, assess, and discuss the cases presented by one another. This enhances the total learning experience and although not occurring in a field environment, provides a semblance of some of the functions which would be required of an OM unit.

In addition to the experience received at the Indianapolis Veterans Administration Medical Center, the 55th has a heavy focus on field readiness and combat psychiatry, adhering to principles set forth by the U.S. Army, Academy of Health Sciences and guidance provided by COL James Stokes, MC, Ft. Sam Houston, Texas. The 55th is frequently referred to as "The Fighting 55th" by some of the surrounding units because the field training is realistic, hard-charging, and meaningful. The 55th's leaders hold a strong belief that the members must be soldiers first, before they can be medical or psychiatric/mental health treatment personnel.

An example of the rugged field training was displayed in an exercise termed "FTX Joe Webb". The FTX was the brainchild of the 55th's own SGT Joseph Webb, a former infantryman who "converted" to a 91F when he joined the unit. FTX Joe Webb, conducted at Area Bravo, a heavily wooded and hilly terrain site at Ft. Benjamin Harrison, Indiana, incorporated the MILES laser system. The exercise was multi-purpose and integrated a number of battlefield concepts, including road marching, movement under fire, testing of NBC capabilities, ability to identify friendly vs. foe aircraft and armor, escape and survival. The unit was divided into three teams which in "round robin" fashion proceeded on the mission of accomplishing several objectives, all under the aforementioned conditions. One element of the unit served as the OPFOR (opposition forces: which provided the continuous attack on the three respective teams). The pre-FTX training focused on field adeptness, of course, but combat readiness as well. To meet objectives and accomplish the mission, each team proceeded through woods, up and down hills, over streams. This was accomplished "under fire", with OPFOR providing firepower. The MILES laser system validated the adeptness (or lack of), weapons proficiency and marksmanship. Both OPFOR and teams experienced being POWs (or capturing prisoners). The actual objectives were preplanned and were met only if the respective teams conquered natural and human induced elements and were fortunate enough to endure and locate land features which indicated that the mission was accomplished. The extensive density of the vegetation at Area Bravo necessitated that teams possessed competency in map reading, use of compasses, and field radios. The entire exercise was monitored by "umpires", all Regular Army soldiers who served in Vietnam and all of whom volunteered their off-duty hours to participate in the 55th's FTX. On the last day of the exercise, the unit divided into two teams and played a friendly (?) game of "capture the flag." Again, the aforementioned principles were applied, MILES laser was used.

Although FTX Joe Webb may be considered by some as inappropriate utilization of OM teams' time and energy, the 55th found it very relevant to their overall mission. Numerous combat stress principles were incorporated into the exercise. Some of the objectives included proper assessment and treatment of combat stress cases. After the exercise, debriefing focused on identifying elements that the soldier in combat experiences which precipitate or add to combat stress and battle fatigue. For a few days, the 55th felt the fatigue, the frustration, the importance of knowing and practicing basic soldier skills. They gained a degree of appreciation for concepts which we preach to others -- sound leadership, group cohesiveness, rest, food, and basic hygiene. -- An added attraction, not incorporated into the OP plan and totally unexpected, was inclement weather. The entire exercise, including sleeping/eating was conducted during thunderstorms and even, at one point, tornado warnings. Following FTX Joe Webb, the "Fighting 55th" may have felt more like the weary, wounded, and yes, wet 55th -- but the lessons learned are the type that can only be attained through realistic training -- and are in keeping with the unit philosophy, "Training is accomplished through doing." Because of the FTX Joe Webb type of exercises, the unit has more confidence, and a deeper appreciation for the soldiers they are expected to treat.

The 55th, like other OM teams, has performed Annual Training at a variety of sites including "Dusty Bull," at North Ft. Hood, TX, Ft. Knox, KY, Ft. Bragg, N.C., Ft. Hood, TX, Ft. Leavenworth, KS. The competent and hard-charging unit gives its all, wherever it trains -- and receives excellent evaluations every time. At Ft. Knox, KY, the 55th produced a video tape and pamphlet for the Brigade Commanders and NCOs on Suicide Prevention. While at the U.S. Disciplinary Barracks at Ft. Leavenworth, KS, the unit produced videos on "Stress Management for Inmates" and "Stress Management for Correctional Specialists", both of which are now a routine part of the orientation program at the USDB.

A unit is only as good as its members. The 55th is fortunate to have some gifted soldiers who are diversified in their talents. This is reflected in some of the honors and achievements the unit and its members have received:

1984 --- PV2 Randall Sackett was honor graduate of 91G school at Ft. Sam Houston, Texas.

1985 --- SFC John Vannatta won Pulliam Award -- presented by the Indianapolis Star News for "best citizen soldier" in Indiana.

SP4 David Maultsby won MG Noble F. Schlatter Award as 123D ARCOM Soldier of the Year.

MAJ Connie Boatright was awarded Arthur Flemming Award in Washington, D.C. as outstanding Federal Employee and also won Federal Employee of the Year for Indianapolis VA Medical Center.

SGT David Maultsby named Fourth Army Soldier of the Year.

CPT Jerry Havens named "Social Worker of the Year" for Grant county.

FTX "Joe Webb" televised on Channel 4, Indianapolis and featured in "Pathfinder" (123D ARCOM Publication).

SGT David Maultsby was honor graduate of PLDC (Primary Leadership Development Course) at Ft. McCoy, Wisconsin.

MAJ Terry O'Donnell and SGT David Maultsby were selected members of the 123D ARCOM High Power Rifle Team.

55th Rifle Team won first place, world-wide Postal Match for U.S. Army Reserve.

SFC Vannatta selected as member of 123D ARCOM Pistol Team.

1987 --- MAJ Connie Boatright graduates from Command and General Staff college.

MAJ Barbara Coyner graduates from Command and General Staff college.

1988 --- SFC John Vannatta awarded bronze medal for 123D ARCOM .45 caliber pistol competition.

CPT Lawrence Strohacker completes doctorate degree in counseling.

SGT John Briggs completes masters degree in counseling.

SFC Ron Branca is nearing completion of doctorate in Educational Psychology and SFC John Vannatta has begun work on his doctorate in this area.

MAJ Theodore Long and MAJ Connie Boatright have both begun work on doctorate degrees.

MAJ Terry O'Donnell and MAJ Richard Wilson each have one phase to complete before becoming Command and General Staff college graduates.

Some of the unit and individual accomplishments may have been overlooked in this written account. Each soldier brings unique contributions which enhance the overall mission.

Many, if not most, of the 55th's unit members work as civilians in professions compatible with a psychiatric unit, i.e. they work in psych/mental health in clinical, research, education, administrative areas.

The 55th individually and collectively believe in itself and its mission. It will continue to charge hard to be one of the finest units in the U.S. Army Reserve.

PSYCHOLOGICAL ASPECTS OF COMBAT STRESS:
A MODEL DERIVED FROM ISRAELI AND OTHER COMBAT EXPERIENCES

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BACKGROUND

The model presented in this paper is a blend of theory and practice. The theoretical approach stems primarily from the cognitive theories of stress and coping which emphasize the role of cognitive appraisal and active coping in the individual's response to stressful conditions (Lazarus, 1966; Arnold, 1960; Lazarus and Folkman, 1984; and Gal and Lazarus, 1975). The practical ideas derived from the combat experiences of the author and those of his colleagues in the Israeli Defence Forces (IDF). These ideas were subsequently discussed and elaborated with well-seasoned IDF field commanders. The model has been used in lectures given at various senior command courses in the Israeli military and has been a useful tool for approaching the complexity of human behavior in groups under stress.

INTRODUCTION TO THE MODEL

A number of studies related to World War II (e.g. Stouffer, et al, 1949; Grinker and Spiegel, 1945), to the Korean and Vietnam wars (e.g. Davis, 1956; Bourne, 1969), and to the Arab-Israeli Wars (Noy, et al, 1983; Belenky, et al, 1983; Gal, 1986a) have delineated variables which prevent or promote the individual's ability to cope with combat stress. These studies and the salient coping variables have been summarized by several authors (Glass, 1973; Jones, 1981). In the years following the Vietnam era an abundance of literature has been produced regarding post-traumatic stress disorders (PTSD) of the Vietnam war veterans (e.g. Figley, 1978; Williams, 1980; Kelly, 1985; a selected bibliography by Fairbank, et al, 1981). Although this diverse literature does not lack theoretical and conceptual framework, a coherent scheme of the relevant variables and their interactions and impact on subsequent combat stress reactions has been lacking. There have been attempts at a dynamic interpretation of the simple relation between nature, nurture and combat stress, beginning as early as Salmon (1917) and extending as recently as Kellet (1982) and Shaw (1983). Yet the complexity of the combat situation calls for a multi-variable and a rather complex, interactive model to account for the multitude of factors involved in the generation of, and consequent coping with, the stress of combat.

The present model (see Figure 1) is interactional in that it posits a number of antecedent variables acting through mediating variables to affect the individual's appraisal of the combat situation and subsequently result in the combatant's mode of response and coping with the realities of combat. Furthermore, the model is also dynamical wherein the individual's preferred coping behavior in turn affects his reappraisal of the situation and thus may further alter his combat responses. Finally, the model is also empirical in that all of its components can be experimentally studied, their relative weights empirically determined, and their predictive power statistically calculated.

The antecedent variables pertain to the individual, group, and environmental aspects and may conveniently be categorized as follows:

1. Individual characteristics - personality, non-military stress (family, etc.), prior combat exposure, role in combat.
2. Unit characteristics - cohesion and morale, training, leadership and commitment.
3. Battlefield characteristics - type of battle, surprise and uncertainty, environmental factors (weather, terrain, etc.).

These antecedent variables, according to the proposed model, do not directly determine the soldier's appraisal of the combat situation; rather, they are mediated by other variables -- mediating variables -- in an interactive manner. Of paramount importance in the soldier's expectation or interpretation of the immediate situation are the roles his commanders (or persons in leadership positions) play in providing the information concerning the impending military operation. Thus, the way in which he is briefed, interacting with the antecedent variables, will strongly color his evaluation (i.e. appraisal) of both the nature of the stress and his ability to handle it.

The appraisal process, which is the central notion in this model, may vary along a wide range of alternatives; the exact situation may be assessed, by different individuals or at different moments, as either a terrifying, benign, or challenging situation. Furthermore, the appraisal process pertains to the individual's available resources, mental and physical, to confront the situation. The exact form of the person's appraisal will depend upon the interactive consequences of the given antecedent and mediating factors.

The individual's initial modes of response while confronting a combat situation reflect the immediate result of this process of cognitive appraisal. The responses may be divided into the traditional categories of physical, emotional, cognitive, and social. These immediate, somewhat universal patterns of response will in turn produce individual modes of coping, ranging from an optimal mode (normally involving a high, goal-oriented level of activity) to limited coping (frequently characterized by increased inactivity) to grossly disturbed coping (breakdown).

The modes of coping actually utilized will influence, in a feedback manner, the individual's reappraisal of the newly perceived situation and of his already tested capabilities to cope with it. Thus the cognitive appraisal processes are in a state of dynamic flux, originally affected by the antecedent factors but consequently reflecting also the initial reactions made by the individual. The new appraisal will then lead to different modes of response, leading to different modes of coping and a further new and different appraisal.

The following sections will further detail each of the components of the proposed model and will attempt empirically to substantiate the proposed relationships between them. This analysis will involve direct combat experience as well as relevant research.

ANTECEDENT VARIABLES

Two main groups of variables, antecedent and mediating, lead to the initial appraisal of the combat situation. The antecedent variables comprise those factors which are in the background of the situation; they may be categorized as individual factors, unit factors and battlefield factors.

INDIVIDUAL FACTORS

Among the individual factors that any combatant brings along with him to the battlefield are his personality dispositions and his general well-being. These, together with his previous combat experience and his role in combat, determine the first category of the antecedent variables.

Personality Dispositions

Notwithstanding the almost obvious expectation that behavior in the face of battle should be somehow linked to the warrior's personality, very little empirical evidence has been found linking individual personality factors directly with combat behavior, either in terms of outstanding performance or breakdown. One extensive study (Egbert, et al, 1957), however, did find several characteristics which distinguish "fighters" (soldiers who had received, or had been recommended for, a decoration for valor in combat or were evaluated by peers as high performers) from "non-fighters" (soldiers who were evaluated by peers as poor performers, or who admitted themselves as such). Among the differences revealed in that study, the "fighters" tended to be more intelligent, more masculine, more socially mature, showing greater emotional stability and stronger leadership potential. Indeed, military organizations tend to consider personality variables in selecting personnel for combat roles, particularly leadership roles and special operations. This preselection procedure may, in fact, by virtue of restricting the range for study, account for the difficulties in establishing empirical correlations between personality dispositions and combat performance.

Gal (1987), in a study of soldiers awarded medals for bravery in the 1973 Arab-Israeli War, found only a few differences in personality characteristics between the awarded soldiers and a matched sample of combat soldiers not so awarded. These personality characteristics were previously determined as a part of the officer selection process which many of the medalists had gone through. Medal recipients as compared with their non-awarded peers showed higher scores in leadership, devotion to duty, decisiveness and perseverance under stress while sociability, social intelligence, and emotional stability did not distinguish the two groups.

With regard to psychiatric breakdown among members of combat units, Noy (1978) found that while personality characteristics did not predict such breakdown, they were significant in recovery after breakdown. Men with massive repression of hostility or anxiety, particularly if coupled with situational stress at home, had a poorer prognosis. It is quite evident, then, as concluded by Albert Glass (1973) in his summary of the "lessons learned" from World War II, that "the frequency of psychiatric disorders [in combat] seem to be more related to [group-related factors] than to the character traits of the involved individuals." (p. 995)

Individual's Well-being

While personality dispositions refer to long-standing traits of the individual himself, well-being refers to relationships between the individual and his environment (Campbell, 1981). Such relationships may directly affect combat behavior as shown in the Israeli experience of the 1973 War (Noy, 1978). In a group of 40 Israeli soldiers who suffered battle shock, 80% had prior or ongoing civilian stresses. About one-half had pregnant wives or were new fathers during the year preceding the war and about one quarter of them had experienced a recent death in the immediate family. Other relevant civil stresses consisted of being newly married or separated, or having economic or family problems.

A World War II study (Brill and Beebe, 1955) reported that 20% of psychiatric cases complained of "homesickness" as a significant stress. An even more striking difference between those who became psychiatric casualties and a nonafflicted comparison group was found when variables such as family, school, work, social, recreational, and community adjustments were examined. Soldiers with impairments in these areas were found to have about a two to four times greater chance of breaking down (Brill and Beebe, 1955).

More recent studies have shown high levels of self-reported well-being to be a distinct characteristic of elite combat units (Manning and Fullerton, 1984). Whether operating as a causal factor in facilitating volunteering to elite units, or emerging as a concomitant of belonging to such units, personal sense of well-being is evidently an important antecedent factor for any combatant facing the impending stress of combat.

Previous Combat Experience

The effect of previous experience on fear reactions was demonstrated in studies conducted with combat-like performance. Epstein (1967) and his colleague (Epstein and Fenz, 1965) have demonstrated that experienced parachutists showed different patterns of subjective fear and physiological reactions from those of novice jumpers.

Actual combat experience obviously has an even stronger effect. Indeed it has been recognized, at least since World War II, that initial exposure to combat on the one hand and cumulative combat stress on the other hand result in higher rates of psychiatric breakdown. Units with high percentages of "green" soldiers tended to have higher numbers of psychiatric casualties (Drayer and Glass, 1966). Clearly the soldier with previous combat experience has less chance of breakdown in subsequent exposure until the point (about 30 combat days) at which cumulative stress begins to produce combat inefficiency (Swank and Marchand, 1946).

Apparently even the soldier who has broken down, if properly treated with "forward treatment" (Salmon, 1917), has no greater chance of breakdown again than his combat peers. Looking at Israeli soldiers who had become psychiatric casualties in 1973 and who subsequently served in the 1982 Lebanon War, Solomon, Oppenheimer and Noy (1983) found no significant increased recurrence of psychiatric breakdown among those with prior breakdown if they had been found fit for combat. It should be recognized, however, that a somewhat smaller percentage had been found fit for combat (40% versus 75% in non-psychiatric controls) but this may have been a result of lack of "forward treatment" in 1973.

It might be summarized, then, that previous combat experience may have an enhancing or an inhibiting effect on the soldier's reactions to the new experience -- depending on whether the previous experience had been a traumatic or a non-traumatic one.

Role in Combat

One's role in combat, whether formally assigned or assumed during the vicissitudes of combat, plays a crucial role in his appraisal of the situation and thus in his method of coping. In general, engaging in an assigned role which involves some form of mission-oriented tasks will create a sense of mastery and control as well as distract one from the impending threat (Gal and Lazarus, 1975).

The leadership role in a combat situation is particularly important for one's coping behavior. Bourne, Rose and Mason (1968), for example, in studies conducted during the Vietnam War, have shown significantly different patterns of hormonal responses (normally associated with stress) between officers and enlisted men of a 12 man group who were anticipating engagement in combat. The chronic levels of steroid excretion of officers were higher than those of their enlisted men and rose even higher than those of their men on the day of anticipated attack. The senior radio operator's steroid excretion also rose; indeed, his role was closer to that of the officers, and thus reflects again the importance of role assignment in combat.

Unlike Bourne and his colleagues, who equate steroid excretion with levels of psychological stress in combat, we believe that the level of steroid excretion reflects physiological arousal and that the leadership role may actually be less psychologically stressful. Support for this hypothesis may be seen in the work of Miller (1968) and Miller, et al (1970) with pilots and their radar intercept officers (RIOs) during stressful aircraft landing procedures. They found that while RIOs had lower levels of steroid excretion, the pilots, who had active control over the flights, reported fewer somatic complaints and significantly lower levels of anxiety than the RIOs.

In support of these studies there are numerous personal observations which show the tremendous importance of the leadership role in producing superior combat performance and in protecting the leader from disabling psychological stress. The senior author both personally observed and had many communications from Israeli field commanders describing the psychological strength of mastery, confidence and even daring they have derived, under fire, from the awareness of their leadership role and the expectations of their men.

During the 1973 Arab-Israeli War, Israeli commanders were under the greatest combat danger, being in the forefront of the engagement. This danger is reflected in the fact that a commander had four times the chance of being killed compared with his men (Gabriel and Gal, 1984). Despite the presumed increased risk of battle stress, Levav, et al (1979) showed that the rate of psychiatric breakdown among officers was five times less than that of enlisted men. On the other pole of battlefield performance, that of bravery in battle, the number of Israeli combat officers awarded medals for extraordinary acts of bravery was much higher (64% of the total) than their proportion in the line units (Gal, 1987). When non-commissioned officers (NCOs) are included with commissioned officers, the percentage of medals for bravery rises to 88% awarded to persons in leadership roles.

In conclusion, under battlefield conditions, perceived role is a critical factor in both combat effectiveness and vulnerability to breakdown. Perceived role serves adaptive coping purposes through the interplay of three psychosocial mechanisms: first, the expectations attached to the role (especially the leadership role); second, the sense of mastery and control associated with the role behavior; and third, concentrating on the tasks required by the role distracts attention from the realistic dangers of combat.

To summarize this section referring to individual factors, one can see that while there are no data to show that personality dispositions predict combat behavior, there is good evidence for the importance of background conditions such as the individual's well-being, his previous combat experience and his perceived role in combat.

UNIT FACTORS

In most cases the individual will not operate alone but will be part of a group in combat. The group's size (significant for the individual combatant) may vary from 3 or 4 (as in a fire team or tank crew) to larger formations such as companies or even battalions. These group characteristics, similar to individual characteristics, have important implications for combat behavior. In general, the predominant unit factors influencing combat behavior are unit morale and cohesion; however, other factors which in turn influence cohesion and morale may be separated out, including self-confidence, confidence in weapons, confidence in the unit leaders and higher command and degree of ideological commitment and shared values.

Since the 1973 Arab-Israeli War, the IDF has deployed field psychologists to all its line brigades to survey morale factors at various organizational levels and report back to unit commanders. Systematic analysis (Gal, 1986 "b") of these surveys, as well as related cross-cultural analysis (Gal & Manning, 1987), revealed four general factors important in determining unit climate. These consisted of

1. unit cohesion and morale
2. confidence in commanders
3. confidence in weapons and in oneself as a combatant
4. ideology, values and commitment

Unit cohesion and morale

Unit cohesion and morale have repeatedly been found important for unit performance both in wartime (e.g. Stouffer, et al, 1949) and in peacetime (Manning and Ingraham, in press; Shirom, 1976). In addition these factors had been recognized as cardinal assets for the effectiveness of coping behavior. Among other variables, they were found to affect critically the rates of psychiatric breakdown in combat (e.g. Glass, 1973).

In the words of Glass (1973):

Repeated observations indicated that the absence or inadequacy of such sustaining influences ["group identification," "group cohesiveness," "the buddy system," and "leadership"] or their disruption during combat was mainly responsible for psychiatric breakdowns in battle. These groups or relationship phenomena explained marked differences in the psychiatric casualty rates of various units who were exposed to a similar intensity of battle stress. (p.995)

In more recent studies based on Israeli experiences during the 1973 War, this relationship between unit cohesion and morale and coping behavior was reconfirmed. In a retrospective examination of forty IDF soldiers who suffered psychiatric breakdown in the 1973 War, Noy (1978) found that 40% of these casualties reported minimal group affiliation, in contrast to only 10% in a control group of non-casualties. Similarly, Steiner and Neumann (1978) found the following characteristics in seventy-four reserve soldiers presenting with acute or late onset of post-traumatic combat reactions after the 1973 War: low morale, with little or no identification with their unit or team; lack of trust in leadership; frequent transfer or rotation; feeling of loneliness and not belonging to their units; and low self-esteem concerning their military performance.

Thus, low level of morale and weak bonds with comrades and leaders may elevate the perceived stress of combat and ultimately result in severe combat reactions -- as indeed happened in low-cohesion, low-morale units. At the other end of the spectrum, elite units, famous for their high degree of cohesion and morale, have consistently had low psychiatric casualty rates despite frequent exposure to high-intensity battle stress.

Confidence in Commanders

The paramount importance of the role of leadership in combat has been recognized since antiquity. The history of battle has always been the history of leaders forging their subordinates' confidence to achieve ultimate victories. Whether the fighting unit is a small band of warriors with spears or a vast army with laser-aimed rifles and bombs, their confidence in their leader is the one essential.

Contemporary studies confirm the crucial role of unit commanders in preparing troops for combat, enhancing troop morale, and leading them courageously in battle. Thus the soldier's confidence in the commander is also critical in protecting him from overwhelming battle stress. In Israeli studies during the 1982 Lebanon incursion, Kalay (1983) found three elements which inspire confidence in the commander: belief in the professional competence of the commander; belief in his credibility; and the perception of how caring he is for his troops. While in garrison all three components are equally important; in combat, trust in the commander's professional competence becomes primary.

In reviews of Israeli morale surveys during both the 1973 Arab-Israeli War and the 1982 Lebanon incursion, the author (Gal, 1986a) compared levels of confidence of soldiers in commanders at various command levels from platoon to division. While assessments before combat showed an almost linear increase of confidence of troops in their commanders with increasing levels of command

(i.e., lowest at the platoon leader and highest at the division commander levels), after combat the trend was generally reversed with the highest levels of confidence shown now in the more immediate commanders (platoon, company, battalion) and relatively lower confidence at the more remote levels of command (brigade, division). This difference may be accounted for on the basis that prior to battle the soldier perceives his welfare and success as being dependent on higher command plans and decisions, but in actual combat he finds that his very survival depends mainly on the actions of his more immediate leaders.

It is apparent, then, that despite marked changes in the configuration and technology of the battlefield, the confidence troops have in their commanders at all levels remains critical in their attempts to cope with the stresses of battle.

Confidence as a Soldier

As described earlier, "green troops" suffer higher rates of psychiatric casualties than battle-experienced troops. This may well reflect the importance of increased confidence of the soldier in his own battle skills.

Confidence in one's weapons and in one's proficiency as a combatant has been shown to be important for the soldier's morale. In a morale survey among Israeli soldiers anticipating combat, Gal (1986b) reported a high degree of correlations between their personal level of morale and confidence in themselves as combatants and in the unit's weapons system.

Furthermore, Steiner and Neumann (1978), studying the combat experiences of Israeli veterans of the 1973 Yom Kippur War, examined among other variables the relationship between self-confidence in military performance and the development of post-traumatic stress disorders. They found that 46% of 74 soldiers suffering traumatic reactions reported low esteem regarding their military performance and knowledge. In contrast, only 3% of 100 soldiers in a non-afflicted control group reported such lack of self-confidence.

Another source of the soldier's confidence is his familiarity with his contingent mission, with the operational terrain and with the exact location of friendly and enemy forces. Since one of the well-established sources of anxiety is fear of the unknown and the unfamiliar, introducing the soldier to the details of his mission, the terrain and the deployment of forces, will ultimately reduce his anxiety level.

These various aspects of a soldier's self-confidence -- building trust in his own combat skills, weapons systems, and gaining familiarity with missions and terrain -- are all created during training periods. Paradoxically, only exposure to the actual conditions of combat will adequately prepare one for the stresses of the battlefield. It follows that the more realistic the training, the better-prepared the soldier will be. However, the growing sophistication (and costliness) of modern weaponry which has resulted in the increasing use of training by simulation devices may act against the accomplishment of such realistic training. Simulation training, while usually accurate in its technical aspects, is quite dissimilar from the arduous and horrifying conditions of combat. Military training, therefore, must aim not only at producing technical proficiency with one's weapon but also at developing his soldiering skills and proficiency to serve him as a psychological defense mechanism against the strenuous conditions of the battlefield.

Ideology, Values and Commitment

It is commonly believed that a strong ideological conviction plays a significant role in combat motivation. Obviously when a soldier believes that he is defending his homeland, he may derive additional strength to face the horrors of battle. However, while it is evident that such ideological convictions foster the joining of a military organization, there is little empirical data supporting the position that such feelings enhance performance or prevent breakdown in the midst of a combat situation. In fact, observations by acknowledged military experts have de-emphasized the importance of ideology when survival on the battlefield is at stake. For example, S.L.A. Marshall (1958) after visiting Israel and discovering the importance of nationalist feelings to its citizens, gave his own judgment:

But for my own part, I reject finally the idea that the extraordinary elan of that Army in combat comes from self-identification of the individual with the goals of his nation in the hour when his life is in danger. That is not the nature of man under battle; his thoughts are as local as is his view of the nearest ground cover, and unless he feels a solidarity with the people immediately around him and is carried forward by their momentum, neither thoughts about the ideals of his country nor reflections on his love for his wife will keep him from diving toward the nearest protection. (p. 304)

In a similar vein Field Marshall Montgomery (1946) in referring to patriotic feelings and historical roots of combat motivation deliberately downplayed these factors: ". . . [I]n the crisis of battle the majority of men will not derive encouragement from the glories of the past but will seek aid from their leaders and comrades of the present" (p.21).

Despite this discounting of idealistic feelings as a factor in actual combat, there is evidence that a soldier's perception of the legitimacy of his side's participation in war is important for his morale. A morale survey conducted among IDF troops prior to the Israeli incursion into Lebanon found a positive correlation between the soldiers' morale level and their agreement regarding the justification for a contingent invasion into Lebanon (Gal, 1986b).

A similar relationship between morale and perceived legitimacy of one's side in a war could have been found in Vietnam. Renner (1973) and Gabriel and Savage (1978) have argued that after 1968 the legitimacy of the US position was not accepted by many of the American soldiers, hence such evidence of unit disintegration as "fragging" (assassination of one's leaders), desertion, drug abuse during combat, and combat refusals.

Recent reports (Klose, 1984) indicate that Soviet soldiers in Afghanistan suffer low morale and engage in widespread drug abuse and some "fragging" similar to US soldiers in the late phases of the Vietnam War. Defecting soldiers related this to loss of belief in the legitimacy of the four-year war: "It's a stupid war, not useful to anyone."

Ideological concerns thus seem most important in wars of low intensity with intermittent combat and in the anticipatory phases before battles or during lulls between battles. In the heat of battle, however, ideological motivation is replaced by other unit factors such as leadership, unit cohesion and combat skillfulness.

BATTLEFIELD FACTORS

The third group of antecedent variables, battlefield factors, may play a decisive role in promoting combat stress since they include the nature of the threat and the environment of the battlefield. Most battlefields have unique features that generate different levels of stress. The US battles on Okinawa and Normandy, for example, both amphibious invasions, had vastly different characteristics and quite different rates of psychiatric casualties, very high in Okinawa and relatively low in Normandy. Likewise, the Israeli Six Day War and Yom Kippur War were both brief and of high intensity but differed markedly in the impact on troop morale and psychiatric casualties, almost none in the former and relatively high in the latter.

The main components in this last category of antecedent variable are the type of battle, its length and intensity, the uncertain elements of battle and the physical characteristics of the battlefield.

Type of Battle

Offensive and defensive operations may create vast differences in generating stress reactions. In defensive operations, especially with impending danger but without active engagement to break the tension, the soldier is subjected to an enforced passivity and experiences a feeling of helplessness. By contrast, in offensive operations, even though the risk may be greater, the soldier is kept active, has a vicarious sense of control over the situation, and is distracted from personal concerns (Gal and Lazarus, 1975).

Similarly, during static situations such as being pinned down for long periods, perhaps by artillery fire or similar situations of immobility, stress casualties are expected to be higher than in mobile situations such as advancing or even retreating forces (Glass, 1957).

Day versus night operations may also generate different stress reactions in synergism with other situations. For example, at nighttime the soldier in a defensive posture may have his feelings of isolation accentuated by darkness. On the other hand, daytime operations with active engagement of the enemy may allow the soldier to see his wounded and dead comrades, adding to his battle stress. Unfortunately no clear data indicating increased pathogenicity for either situation exists.

Length and Intensity of Combat

Length of exposure to combat has been correlated with cumulative stress (Swank and Marchand, 1946; Beebe and Appel, 1958) while intensity of combat is more related to acute stress (Glass, 1957). In furthering this distinction, some authors refer to the consequences of cumulative stress as "combat exhaustion" or "fatigue" and of acute stress as "battle shock." In current nosology (i.e. DSM III), however, "adjustment disorders" and "posttraumatic stress disorder (PTSD)" have generally replaced all of these terms (American Psychiatric Association, 1980).

Several authors have attempted a predictive model of breakdown based on duration of combat exposure (Swank and Marchand, 1946; Beebe and Appel, 1958) or intensity of combat (Glass, et al, 1956a, 1956b and 1957). Swank and Marchand (1946) found that most psychiatric casualties occurred after 30 to 45

days of exposure to combat. Beebe and Appel (1958), on the other hand, predicted that "... the breaking point of the average rifleman seems to have been reached at about 88 days of company combat [days in which a company casualty occurred]" (p.163). In contrast, however, the Israeli data from the Yom Kippur War (which lasted less than 3 weeks) showed highest occurrence of psychiatric casualties at both the very first days and the last few days of that war (Levav, Greenfeld & Baruch, 1979).

A number of authors (Beebe and DeBakey, 1952; Glass, et al, 1956a, 1956b, and 1957; Glass, 1957 and 1973; Levav, Greenfeld & Baruch, 1979; Noy, et al, 1983) have observed the relationship between combat intensity, as indicated by wounded and killed in action (WIA and KIA) and combat breakdown. Normally the rate of psychiatric casualties will fluctuate in proportion to the WIA in a roughly one to three ratio, i.e. 23% of the total combat casualties; however, in low intensity, intermittent combat psychiatric casualties are less directly related to combat and take different forms (Renner, 1973; Crocq, et al, 1985; Jones, in press).

Battle Anticipation, Uncertainty and Surprise

As alluded to earlier, the anticipation of battle may be more stressful than actual battle (Gal and Lazarus, 1975). A well-known syndrome described by WWII physicians as the "pre-combat syndrome" (Johnson, 1969) consisted of vague complaints without identifiable physical findings among those scheduled for combat, for example, air crews awaiting a bombing run. Furthermore, Jones (1967) noted that there were numerous psychiatric complaints in the 25th US Army Division in the several months when deployment to Vietnam was uncertain, but fewer when it became definitive.

Generally troops prefer to avoid impending threats of combat; however, long periods of anticipation may result in paradoxical positive feelings concerning impending combat. In an unpublished study, Gal (1975) has monitored the feelings of combat anticipation of a group of infantrymen stationed in a combat zone for three weeks. He found an inverted U-shaped curve peaking at 10 days measuring strong anticipation of actual engagement with the enemy. This response pattern reflects during the ascending leg the mounting anticipation and a growing desire to relieve the anticipatory anxiety with action. The descending limb may reflect a desire to avoid combat altogether since relief was becoming imminent.

Breznitz (1967) among others, has discussed this reaction pattern in his study of "incubation of threat." According to Breznitz, two conflicting tendencies may operate simultaneously in an anticipatory period. On the one hand, the person gradually relaxes after the initial introduction of the threat. On the other hand, there is increasing excitation as the actual occurrence of the threatening event approaches. In cases where a U-shaped curve is exhibited by stress reactions, this curve may be the "net" result of these two processes.

Uncertainty can take two forms: temporal uncertainty in which the time when an event will occur is unknown and event uncertainty in which the time is known but the nature of an event is unknown. Situations involving both types of uncertainty are common in combat. In general the greater the uncertainty the greater the stress (Epstein and Roupemon, 1970; Monat, Averill & Lazarus, 1972; Monat, 1976).

Although anticipation and uncertainty create high levels of stress, a surprise aversive event is even more stressful. The initial phase of a surprise attack may maximize panic and psychiatric breakdown. This was reflected in high psychiatric casualties among Egyptian soldiers in the early period following the 1967 surprise attack by Israel (Mansour, Salama and El Sudani, personal communications). Likewise numerous psychiatric casualties among Israeli troops occurred in the first hours and days following the surprise attack by Arab forces in the 1973 War (Levav, Greenfeld & Baruch, 1979; Belenky, Tyner and Sodetz, 1983).

Environmental Conditions

Harsh environments such as arctic or tropical climates, and wet or other inclement weather increase combat stress casualties, probably through the increased physiological stress added to the psychological stress of combat. Numerous authors have commented on the deleterious effects of adverse environmental conditions on morale (Stouffer, et al, 1949) and on the soldier's ability to cope in combat (Lewis and Engle, 1954).

Masked psychiatric conditions ranging from frost-bite or immersion foot in cold or wet climates to dehydration in hot or dry climates (Fullerton, 1983) exemplify the relationship between combat breakdown and adverse environments.

MEDIATING VARIABLES

While antecedent variables are important in the soldier's appraisal of the combat situation, their subsequent impact on the individual's response and coping behavior is determined by mediating variables. These variables are, in the first place, cognitive in their nature, involving cognitive interpretations of the antecedents, a logical evaluation of the situation and a build-up of expectations both of one's behavior and of the consequences of the entire situation.

A second characteristic of these mediating variables is that they are largely controlled by the commanders, officers as well as NCOs, who may give them a positive or negative notation. For example, a determined, confident commander, who conveys to his troops his optimistic view, will actually increase the chances of success. On the other hand, an unenthusiastic, subdued or frightened presentation will create uncertainty or fear and result in less resolute, more pessimistic appraisals, increasing the possibility of failure.

The commander plays a central role in creating the individual's appraisal of the situation by acting as a lens which focuses the antecedent variables into a unified interpretation of the situation. Like in a binocular, this "lens" works (with regard to the stress of combat) to enlarge the perceived threat or to reduce it, make it closer or more remote, better formed or more blurred. Though it may not be possible to modify many of the antecedent variables, the commander can be trained to present and interpret information regarding these antecedents in an optimal manner and hence create an expectation of success.

A third characteristic of the mediating variables is their dynamic quality. While the antecedent factors may change or remain the same, the interpretation given them may vary as new information becomes available or as

behavior changes as a consequence of the appraisal. A heroic or cowardly act by oneself or a comrade, for example, will change the initial interpretation of the situation and lead to changed responses.

It must be realized that there are not clear-cut distinctions between the antecedent and mediating variables. Interpretations and expectations may stem directly from the individual's predispositions or be part of a unit characteristic. These antecedent and mediating variables are schematically presented separately in the model for purposes of clarity only.

THE APPRAISAL PROCESS

The idea that how a person construes an event may shape the emotional and behavioral response of that person has been long accepted in modern psychology (Lewin, 1936; Murray, 1938; Arnold, 1960; and Ellis, 1970 - to mention just a few). However, it was mainly Lazarus and his collaborators (e.g. Lazarus, 1966; Lazarus, Averill & Opton, 1974; Lazarus and Folkman, 1984) who have clearly defined and systematically studies the cognitive appraisal processes.

The appraisal process is the bridge between the external conditions and the soldier's response. It is the combination of the soldier's perception and evaluation of both the situation and his own capability to cope with it. The same situation may result in a whole spectrum of appraisals by various individuals or by the same individual at different times. As Kurt Lewin expressed it long ago (1936):

Even when from the standpoint of the physicist, the environment is identical or nearly identical for a child and for an adult, the psychological situation can be fundamentally different . . . the situation must be represented in the way in which it is 'real' for the individual in question, that is, as it affects him. (pp. 24-25)

Thus a given combat situation may appear lethal, hazardous, adventurous or auspicious, while the individual reaction to it may range from being terrified or threatened to challenged or excited.

The appraisal process further determines the course of action, which an individual might take when faced with a stressful situation. This is reflected directly, for example, in the work of Grinker and Spiegel (1945) on combat stress in World War II. As these authors noted "appraisal of the situation requires mental activity involving judgment, discrimination and choice of activity" (p. 122).

Lazarus and his colleagues have empirically demonstrated the dominance of the cognitive appraisal process in determining the emotional and behavioral responses of groups and individuals to stress. In a series of studies (see Lazarus and Folkman, 1984 for review) in which audiences viewed highly distressing films, the responses of the audience were clearly determined by a narrative voice which interpreted the ordeal as ranging from traumatic, neutral, intellectualized or benign (through denial-like processes). Though the subjects all saw exactly the same film, their reactions were drastically different as a function of the sound track the introduction provided before the film. Using the neutral group as a reference, the trauma group showed marked elevation of physiological and psychological distress while the intellectual

and denial groups showed reduction in distress. Subsequent experiments using the same paradigm revealed different stress reactions as a function of the conditions (i.e. length of anticipatory time, level of uncertainty) on which the appraisal process depended, the type of cognitive activities (i.e. detachment or involvement) required from the subjects and as a function of individual differences.

Thus the same situation may generate different responses depending on the type of interpretation or expectation suggested prior to or during the situation. Likewise an individual or group reaction to battlefield conditions can be determined by the mediating variables (interpretations, expectations, form of presentation) which are primarily controlled by the commander. From these different appraisals will result the different modes of response or coping.

MODES OF RESPONSE

The common modes of response to stressful combat situations may be categorized as follows:

1. Physical. These responses include autonomic changes (tachycardia, vasoconstriction, sweating, increased gastro-intestinal motility), musculoskeletal (increased tonicity and perfusion of blood to muscle) and glandular changes (release of medullary and cortical hormones from the adrenal glands producing many of the foregoing effects).
2. Emotional. Expressed in a variety of affective reactions varying from enthusiastic excitement to apprehensive fear, anxiety or depression.
3. Cognitive. Including distortion of perception with narrowing of attention span, hyperalertness to certain stimuli, and increased utilization of automatic or overlearned responses.
4. Social. Increased dependency on leadership and need of affiliation, sometimes expressed by seeking reassurance and physical clustering. negative aspects may be an increased tendency to make demands and irritability.

These reactions are universal. Alerting the soldier to their anticipated appearance under stress by reassuring him that they are normal will serve a preventive and therapeutic purpose. The appraisal plays a lesser role in eliciting or controlling these responses than it does with the coping responses which will be discussed next.

While the modes of response (in our model) are relatively involuntary or automatic, immediate and brief, the individual's modes of coping are more flexible, voluntary, and may be delayed and prolonged. The former may only to some extent be conditioned through training; the latter are highly influenced by training and strongly determined by the instant conditions of combat.

MODES OF COPING

The individual's appraisal of the situation and the variety of modes of response are incorporated eventually into an integrated, or holistic, mode of coping, which may range from various levels of goal-oriented activity through passivity to actual breakdown.

The emphasis on "goal-oriented" activity pertains to the fact that in combat situations some activities (such as uncontrolled fleeing, aimless shooting, etc.) can be dysfunctional, at least from the military point of view. On the other hand, under particular circumstances staying still or minimizing one's movements may serve as the most functional and mission-oriented behavior at the moment. Similarly, research on coping behavior shows that at times, under certain circumstances, avoidant coping behaviors are the most effective means of dealing with stress (Kaloupek, White & Wong, 1984; Pearlin and Schooler, 1978).

However, under battlefield conditions, where fear and horror tend to paralyze the combatant, and helplessness may be fatal, the readiness/willingness/competence to adopt an active, goal-oriented approach is most desirable. The important point here is the state-of-mind of the combatant with regard to the question: "How am I going to handle this now?" A successful and effective mode of coping is reflected in a state-of-mind which will provide an active, goal-oriented, response to that question.

The active mode of coping may take various forms. During combat anticipation (almost always present on the battlefield), goal-oriented activity may take the form of preparation, checking gear and plans, last minute details, etc. Activity may not necessarily be directly related to the threat, being, for example, card playing, book reading, letter writing, etc. These activities, nonetheless, serve as successful coping behavior since they distract the individual from considering the death or wounding which may await him in battle. This behavior, particularly when it takes the form of combat preparations, also gives the soldier a sense of mastery over the situation, hence diminishing anxiety (Gal and Lazarus, 1975).

During combat, the active coping mode is seen in the combatant's overall goal-oriented behavior: seeking shelter, operating one's weapon system, scanning or scouting the terrain, etc. Similarly, the combat-support soldier will stay active in his respective duties. The consequences of this active mode are usually greater initiative, higher level of performance, and successful accomplishment of the mission. Typically, this activity is resolute and adaptable and may result in acts of bravery on the battlefield.

Relative inactivity or even passivity in the combat situation is manifested by decreased movements, relative apathy to the surroundings and mission, and lack of initiative. The observation (Marshall, 1959) during the Korean War that only a small percentage of soldiers fired their weapons probably applies to this group of combatants. A consequence of this unsuccessful coping mode is not only a failure to perform effectively but also a beginning of a psychological collapse, exhibited by increasing fatigue, mounting anxiety, and a sense of burnout. The ultimate result of a passive mode of coping may be a complete breakdown, whether labelled combat fatigue, battle shock, or PTSD. This breakdown occurs when the soldier's preoccupation with his own anxieties leads to removal from battle.

THE REAPPRAISAL PROCESS

Whatever mode of coping is utilized by the individual, it is not only an outcome of the initial combat appraisal but also serves as an additional input into the ongoing reappraisal of the situation. Based on his own mode of coping, the soldier may now reinterpret the combat situation. This in turn may generate new modes of response and coping which further modify the appraisal. Typically, if a successful active-coping mode took place, the reappraisal process tends to be in the direction of optimism. Conversely, passive coping will lead to a pessimistic appraisal and resultant less effective modes of response and coping and increasingly negative appraisals. Thus the behavior of the soldier in combat is an ongoing process of appraisals and reappraisals which are affected by his perception of the situation on one hand and his initial responses and coping on the other hand.

Our approach can be summarized by the following conclusion, phrased by a world-known cognitive psychologist (Ekehammar, 1974): "... the person is a function of the situation, but also, and more importantly, ... the situation is a function of the person through the person's (a) cognitive construction of situations and (b) active selection and modification of situations" (p. 1035).

CONCLUSIONS

This model of combat stress is complex in that there are multiple interacting variables in its application, and, furthermore, the variables interact in an ongoing, circular fashion. Despite its complexity, the model is operationally applicable. Its various components can be observed, monitored, and studied. While the model is based on inveterate theories on stress and coping within the cognitive psychology arena, it also enables further empirical testing and validation of its basic postulates. One of the areas which still call for intensive research is that of cross-cultural differences. There are marked cultural differences in the psychophysiological and emotional response to various stressful situations among different cultural and ethnic groups (Ekman & Scherer, 1986; Hochschild, 1983). But more specifically, Gal and Manning (1987) have recently reported apparent cultural differences among combat soldiers of two different armies regarding their perceived unit morale, cohesion, and combat readiness. The present model may further assist investigation into cross-cultural differences in stress appraisal and coping behavior.

Furthermore, this model can equip military personnel with a better introspection of soldiers' behavior in combat stress conditions. A combat leader who is aware of the multiple variables mediating stress in battle can understand and anticipate both the behavior of troops and of himself and take preventive measures to diminish the stress. Understanding the ongoing, circular nature of these variables, he can intervene to reduce the stresses, the anxiety, and, ultimately, the potential for breakdown.

This model can be taught in varied types of leadership training. For example, in the Israeli Defence Forces Staff and Command School, officers who were combat veterans were presented with the model and asked to test it against their personal experiences. Almost unanimously these officers gave positive evaluations of the validity of the model for combat. The best didactic approach seemed to be through an initial presentation of the model followed by

small-group interaction in which instructors guided the discussion. The small-group participants explored the applicability of the model to their own experiences.

Students of war and combat agree that the most precious commodity in battle is not armaments but men. The understanding and application of this model may conserve and increase the efficiency of the vital human resource.

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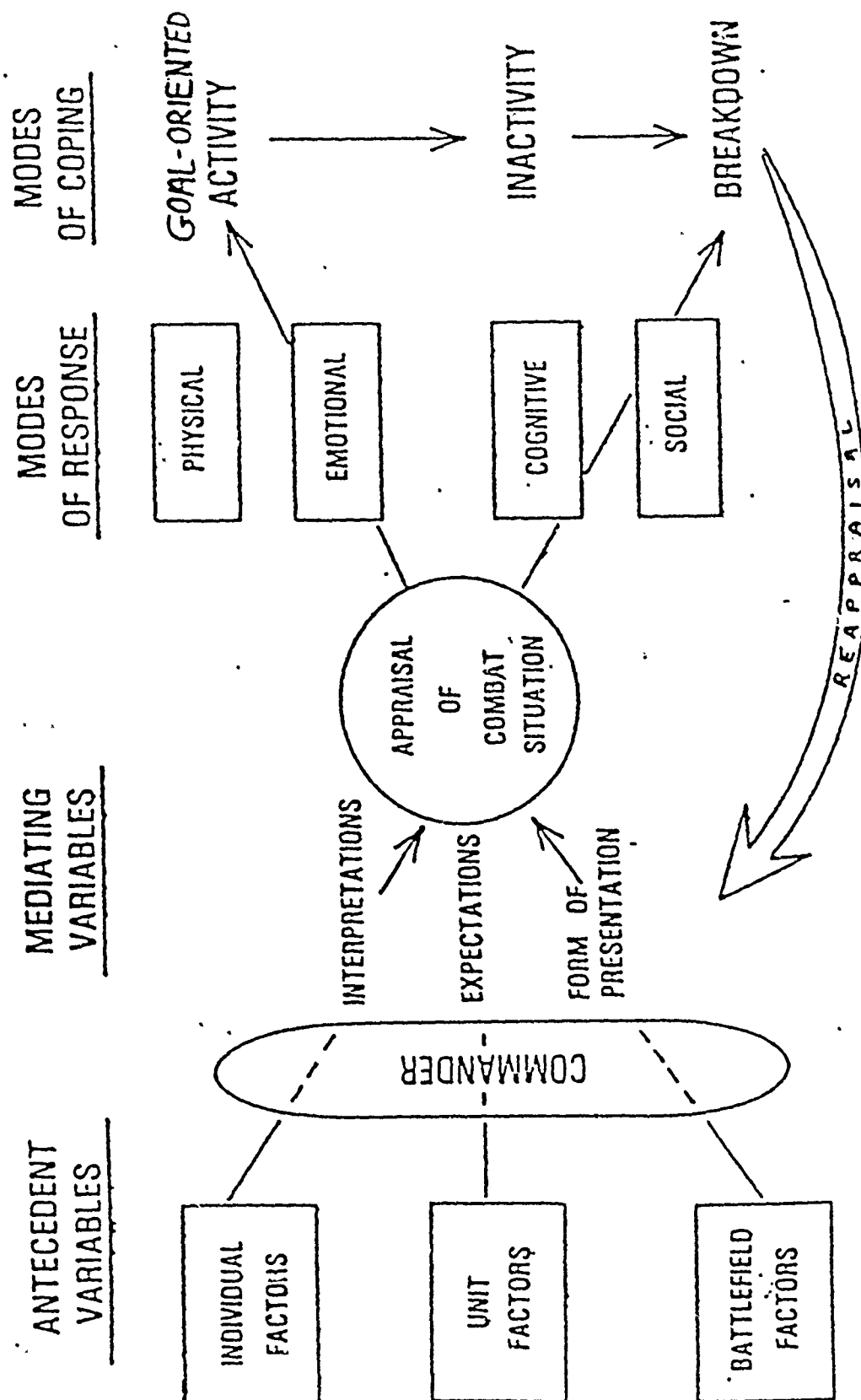
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SOLDIERS BEHAVIOR IN COMBAT STRESS CONDITIONS



BATTLE-FATIGUED SOLDIER SUPERVISION EXERCISE

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This practical exercise is used to train U.S. Army Medical Department Physicians, Physician Assistants and Non-Commissioned Officers (NCOs in the Advanced Course) in how to supervise their own subordinates and peers who are showing signs of mild or moderate battle fatigue. It can be adapted to other audiences (see paragraph 4.).

a. The objective is for the students to apply the principles of the treatment of battle fatigue and of good leadership (which they have learned in previous lectures) to specific cases. These cases illustrate a broad spectrum of symptoms which can still be considered "mild" or "moderate".

b. By definition, "mild" cases remain in their own small units. "Moderate" cases have been sent to another nearby unit where they can better receive rest, replenishment and special light duties to restore confidence. Neither group are being "treated" as "patients." They are expected to regain full effectiveness while remaining on duty status, using unit resources.

GENERAL PLAN FOR CONDUCTING THE PRACTICAL EXERCISE

a. The practical exercise is in three parts, using the previously learned principles of battle fatigue management. First, the instructor explains the scenario (ANNEX A) and the use of the discussion cases (ANNEX B). He then divides the students into groups of 3-4 each and assigns each group a number (on a card) to foster group identity. Time, approximately 90 minutes.

b. Each group discusses the management of all seven cases and reaches a group decision regarding seven issues per case. The instructor circulates among the groups to answer questions, and also provides time cues to groups who need to speed up in order to finish on time. Time, approximately 90 minutes.

c. The groups reassemble, and are called upon to present their handling of each case. The instructor encourages argument, and presents and defends the "school solutions" (Annex C). Time, approximately 60 minutes.

RESOURCE REQUIREMENTS

a. This exercise is suitable for classes ranging from 3 to over 100 students.

(1) Although one instructor can conduct any size class, two are better for large classes, to circulate, answer student questions, and contribute to the discussion.

(2) For large classes, group size may be increased to 5, 6 or 7 students; however, some students may tend to sit back and not become actively involved unless group process is emphasized.

b. Copies of the instructions and scenario (ANNEX A) and the seven exercise cases (ANNEX B) are provided to each group of students. Ideally, each student receives a copy of all seven cases, but one set per group is acceptable. The cases are:

- (1) 91B Ranger medic, 1000 yard stare, survivor of patrol
- (2) 11B Ranger-trained infantryman, memory loss, survivor of patrol
- (3) 91A ambulance driver (female), anxious, can't sleep
- (4) CW2 physician assistant (female), fingers don't work
- (5) 91A platoon medic (armored cavalry unit), depressed
- (6) E-3 medical technician, fired at hallucination while on guard
- (7) E-6 crew chief (male), shaking uncontrollably, heavy drinker

c. U.S. Army Graphical Training Aid (GTA) 21-3-5. "BATTLE FATIGUE, More Serious Signs; Leader Actions") is a useful pocket-card reference for students prior to this practical exercise. However, they should not spend too much group-discussion-time looking through or copying from it.

(1) GTA 21-3-5 should be available through all Army Training & Audiovisual Support Centers (TASC)

(2) Other pocket cards in the set are GTA 21-3-4 (BATTLE FATIGUE, Normal Common Signs; What To Do For Self & Buddy) and GTA 21-3-6 (BATTLE FATIGUE: Leader Actions & Prevention).

ADAPTING THE PRACTICAL EXERCISE TO OTHER AUDIENCES

a. Because the exercise was developed for Medical Department classes, most of the cases have medical occupational specialties. However, they could easily be rewritten to suit any other Army combat arms or combat service support branch, the Air Force, Navy or Marine Corps, or civilian emergency or disaster-relief scenarios. Just change the job title and a few words in the description of the recent stressors.

b. Cases #3 and 4 were written as females because there are many women in Army Medical Units. However, both of these cases could be males. Cases #6 and 7 could be females, and only the combat exclusion rule prevents Cases #1, 2 and 5 from being females. Those details could easily be rewritten.

c. One message of the practical exercise is that battle fatigue may temporarily look quite "severe," but can still respond quickly to reassurance, rest and replenishment without requiring that the soldier be put under the formal care of medical/mental health personnel. It is important not to over-react and conduct medical workups which are not necessary to protect the soldier's life. However, a non-medical unit would need to be more cautious than does the medical unit presumed in the scenario. Several of the cases would be rated as "severe" battle fatigue until they had been examined by a physician or physician assistant and found to be only "mild or moderate" in the context of the unit, its mission, and the closeness of backup support.

PRACTICAL EXERCISE INSTRUCTIONS

1. DIVIDE INTO WORK GROUPS OF 3-4 STUDENTS EACH.

Students at the odd-numbered tables turn around and face those at the even-numbered tables. If necessary, a few people move to other tables to even up the numbers.

Or groups may be designated or self-selected to give a good mix of experience and background, then allowed to go to separate locations, with instructions to return in 90 minutes.

2. EACH GROUP READS ALL SEVEN CASE DESCRIPTIONS, AND DECIDES HOW TO MANAGE EACH CASE. YOU MUST ANSWER ALL OF THE FOLLOWING QUESTIONS FOR EACH CASE.

- a. What are the "more serious" battle fatigue signs (if any) and their contributing causes.
- b. What steps (if any) should be taken immediately to rule out what serious medical, surgical or psychiatric conditions.
- c. What provision should be made for the soldier's physical needs (cool down, warm up, water, food, sleep, hygiene, clothing and gear, safety).
- d. What guidance do you give to the "active listener" or buddy you assign to this soldier about what to listen for and say in response.
- e. What work assignments should be given to the soldier, and when.
- f. What other actions do you recommend before or after return to duty (e.g., contact the soldier's unit or the Red Cross for information).
- g. What warning signs would be reason to say that the program is not working and that the soldier should be evacuated for formal treatment.

NOTE: A different person may present each case to the group and recommend answers to the questions. Or the group may read each case silently and then discuss it. IT IS THE DISCUSSION WHICH IS IMPORTANT. Record only enough on the form to remind the group what they decided. To finish in 90 minutes and have a little break-time, you must average 11 minutes per case.

3. AFTER EACH GROUP HAS PROCESSED ALL SEVEN CASES, THERE WILL BE A GENERAL DISCUSSION IN WHICH EACH CASE WILL BE REVIEWED.

One group will report how they answered a question for a given case.

Other groups agree, or disagree and say how they answered differently.

The Instructor will give the "SCHOOL SOLUTION". In this complicated area of combat stress and battle fatigue, there are many subtle things that could change a "wrong" answer to "right" or vice versa. The question is, were the BASIC PRINCIPLES understood and considered.

THE PRACTICAL EXERCISE SCENARIO

1. YOU ARE
 - A. THE RESPONSIBLE OFFICER, WARRANT OFFICER OR NCO, WITH JUNIOR LEADERS AND ENLISTED UNDER YOU, AND PERHAPS SOME OTHER UNITS ATTACHED TO YOURS.
 - B. LOCATED AT A MEDICAL TREATMENT FACILITY OF SOME KIND (FOR EXAMPLE, A CLEARING COMPANY, COMBAT SUPPORT HOSPITAL OR PLATOON OF A FIELD HOSPITAL), WITH OTHER UNITS NEARBY,
 - C. IN THE CORPS AREA, NOT IN THE MORE-FORWARD DIVISION AREA,
 - D. SO YOU DO NOT EXPECT TO HAVE TO MOVE IN THE NEXT 24 HOURS.
2. THE TREATMENT FACILITY IS RECEIVING MANY SEVERELY WOUNDED PATIENTS.
 - A. IT AND YOU ARE NOT UNDER DIRECT ATTACK, YET,
 - B. THERE HAVE BEEN GUERRILLA AND AIR ATTACKS IN THE VICINITY,
 - C. FOR THE PAST WEEK, SINCE THE FIGHTING STARTED.
3. EACH OF THE SEVEN SOLDIER "CASES" IS, OR HAS BEEN GIVEN TO YOU TEMPORARILY AS A MEMBER OF YOUR UNIT, NOT AS A PATIENT.
 - A. THE RESPONSIBLE SUPERVISOR OR TRIAGE OFFICER WHO FIRST SAW THEM JUDGED THE SOLDIERS' BATTLE FATIGUE WAS "MILD" OR "MODERATE", NOT "SEVERE", AND THAT THEY CAN BE TREATED WHILE ON DUTY STATUS IN YOUR UNIT.
 - B. YOU DO NOT WANT TO REJECT THAT CONFIDENCE IN YOU WITHOUT SERIOUS CAUSE. YOU CANNOT SIMPLY SAY "THANKS, BUT NO THANKS".
 - C. YOU MUST KEEP THESE SOLDIERS IN YOUR UNIT FOR AT LEAST A DAY OR TWO, AND TRY TO RESTORE THEM TO EFFECTIVE DUTY.
 - D. THOSE WHO CAME FROM OTHER UNITS SHOULD IDEALLY RETURN TO THOSE UNITS WHEN THEY HAVE RECOVERED.
4. NO MENTAL HEALTH PERSONNEL ARE CLOSE, SO YOU CANNOT SIMPLY REFER THE SOLDIER FOR COUNSELING BY SOMEONE ELSE.
5. IF HE/SHE DOES NOT IMPROVE UNDER YOUR SUPERVISION, YOU WILL HAVE TO ARRANGE MEDICAL EVACUATION TO MANY MILES AWAY FOR MORE EVALUATION AND CARE.
 - A. THE SOLDIER WILL PROBABLY NOT RETURN TO DUTY SOON.
 - B. HE/SHE MAY SUFFER PERMANENT PSYCHOLOGICAL HARM FROM OVER-EVACUATION.

CASE #1

91B20 (E5) Medic, male, Ranger, from a Long Range Surveillance detachment (LRSD), the same unit as Case #2.

He and one other member of the LRSD just returned from patrol in the enemy rear and have finished being debriefed by their HQ which is two kilometers down the road. The LRSD team was caught in an ambush by small arms and mortar fire, two days ago. He was almost killed, his best buddy and team leader and all but the one other member (who is Case #2) are missing or dead.

Recent degree of responsibility: extreme

Recent mission demand: extreme, with heavy physical work, too little sleep, food, and hygiene.

Last rest period longer than 4 hours occurred 5+ days ago.

His prior combat experience was days/weeks in Grenada. He is in excellent physical condition. He has his loaded M16 rifle and an 8-inch knife with him.

He appears tired, has the 1000 yard stare, and moves with a slow shuffle. His memory for details is poor, his attention lapses, he takes no initiative and is difficult to get moving, but once started, he continues mechanically to do simple physical tasks. He is indecisive, and seems indifferent to his own safety, but startles at any sudden movement or noise. He has mild diarrhea. He has been drinking coffee and chain-smoking cigarettes since getting back.

Negative Findings: He does not show significant depressive signs or guilt feelings. He is not uncooperative or negativistic. He does know who he is and that this is a medical facility, although he isn't sure of the day# or date.

-
- A. What are the "more serious" signs of this "battle fatigue" and their contributing causes?
 - B. What other medical/surgical conditions need to be ruled out, and how?
 - C. Guidance for attending to physical needs (which, how, and by whom).
 - D. Guidance for your "active listener" (what to listen for and say).
 - E. Guidance for work assignments (what kind, when, with whom).
 - F. Other actions and concerns before/after return to full duty.
 - G. Signs that would show need to get further help or treatment.

CASE #1: Ranger Medic (male): the School Solution

A. Impression: Simple battle fatigue in an experienced combat veteran, with strong component of sleep loss and physical deprivation. This has made him somewhat punchy, indifferent and inattentive to his own safety (now that he is in a safe place), and is probably the reason his unit sent him to you (as escort for Case #2). No reason at this time to believe he is not handling the severe psychological trauma of the ambush well; he got himself and a less functional teammate back safely, and is entitled to "let down" a bit now.

B. Differential Diagnosis: Memory lapses and disorientation to day/date could be signs of organic brain damage or psychogenic amnesia, but are probably just normal fatigue plus lack of motivation to retell his story and answer silly questions asked by rear-area medics just now. Diarrhea is probably just due to anxiety and stress, but could be of infectious origin.

C. Physical needs: He is an "outsider". and needs bedding and gear, plus someone to show him around and get him settled in. His first need is sleep, and he may just sack out fast. Do offer liquids plus a good meal first, plus a chance to clean up if he wants to (and maybe medication for the diarrhea). If he's too keyed up to sleep, these plus reassurance and orientation should be enough to calm him. If not, add a shot of alcohol or low dose valium, one night only. Offer to lock his M16 up with your unit's so he doesn't have to worry about it the first night; he will probably refuse, and there is no reason to insist on taking it from him, although it should be unloaded in case he wakes up in the dark and needs a minute to get reoriented. Allow to sleep 10-12+ hours, then definitely give good breakfast at mess line, shower, shave, clean uniform. Expect him to take care of himself and his own gear.

D. Active listener: Do get him to talk about what happened in the ambush and let feelings come out if he wants. If he doesn't feel grief or guilt, OK; don't force them on him. If he does feel guilty, reassure and help restore perspective. Example: your comrades were all professionals who knew the risks; some of them may still get back alive; you did well to get Case #2 back safely and report to HQ what had happened; your comrades wouldn't have wanted you to die with them. Reinforce his identity as a Ranger Medic and an experienced combat veteran.

E. Work Assignments: If his mood is OK, he is entitled to a day of light duty, including rest and recreation with others in your section. Do not let him out of the area on his own. Do keep him buddied with Case #2, and partially responsible for helping him recover. If his mood is not OK, keep him busy with light non-stressful duties with others in your section which sustain his Ranger medic self-image (e.g. routine sick call). Over the next 2-3 days, increase medic duties and stress (e.g. working with more seriously injured patients), clearly aimed towards return to the Rangers.

F. Other Actions: Have his Ranger HQ send word if any news comes of the other members of the patrol. If possible, get people from his Ranger unit over to visit. If they need him back, he can go immediately, at any time.

G. Warning Signs: If he begins to show serious guilt or depression about what happened to the patrol, or develops anxiety or other symptoms and resists going back to the Ranger unit, and cannot be talked back into shape.

CASE #2

11B10 (E3) Infantryman, Ranger-trained, from the same Long Range Surveillance Detachment (LRSD) as Case #1.

He was also caught in the ambush of the LRSD team by small arms and mortars, two days ago but does not remember anything about it. This was his first time in combat. He knows his own name, unit and life history and remembers the first several days of the patrol and coming back out with the medic, but not what happened to everyone else. He also seems not to know as much basic SQT and infantry skills as you would expect of a soldier with Ranger training, but is otherwise cooperative, though obviously tired. He has his M16, but Case #1 has the ammunition.

The 91B Ranger medic (Case #1) is not much help in filling in the details, but says Case #2 seemed dazed and confused for several hours after escaping the ambush and isn't back to normal yet. He had no obvious signs of head injury.

Examination by a General Medical Officer today also found no physical injury.

Recent degree of responsibility: some.

Recent mission demand: extreme, with heavy physical work, too little sleep, food and hygiene.

Last rest period longer than 4 hours occurred 5+ days ago.

The referral note from LRSD HQ says that the Red Cross sent notification that his mother in the U.S. died while he was on patrol. She had been sick a long time. He has not yet been told.

-
- A. What are the "more serious" symptoms of this "battle fatigue" and their contributing causes?
 - B. What other medical/surgical conditions need to be ruled out, and how?
 - C. Guidance for attending to physical needs (which, how, and by whom).
 - D. Guidance for your "active listener" (what to listen for and say).
 - E. Guidance for work assignments (what kind, when, with whom).
 - F. Other actions and concerns before/after return to full duty.
 - G. Warning signs that would show need to get further help or treatment.

CASE #2: Ranger-trained Infantryman (male); the School Solution

A. Impression: "Battle fatigue," with a strong component of sleep loss and physical deprivation, but with more memory problems than are accounted for by fatigue alone, including amnesia for the ambush. His worry about his mother's chronic illness probably contributed to his stress level; we have the problem of when and how to tell him of her death.

B. Differential Diagnosis: The amnesia for the ambush and perhaps for well-learned task skills could be due to purely psychological blocking of unacceptable memories (for example, he actually caused the disaster, or feels he acted disgracefully in it). It could also be due to concussion (blow to head) during the ambush, with some post-concussion effect. We may never know. There is no evidence of a life-threatening brain problem this long after the event which deserves extensive work-up, but be alert for any worsening signs.

C. Physical Needs: New to unit, needs buddy, orientation, reassurance as to safety, location of bunkers and slit trenches, etc. Keep him and Case #1 together. You may put his M16 in safe keeping with your unit's for the first night, and definitely secure the ammunition. Offer food, drink, quick clean up, then sack out for good long sleep. No medication or alcohol is likely to be needed. Wake him up on schedule, have him clean up, get good breakfast.

D. Active Listener: If Case #1 is doing OK, he and your active listener can retell what happened in the ambush to see whether this releases any memories. Even if it doesn't, it will help fill in the gaps. Reassure him that he may remember in the future, but, then again, he may not. Encourage ventilation of emotions (guilt, fear, anger, etc., etc.) if any come, then help put them in perspective. If none come, don't dredge for them.

E. Work Details: He is entitled to rest and relaxation the first day, with the Ranger Medic, but find ways to support his self-image as a Ranger-trained infantryman and give a chance to evaluate his Ranger skills, e.g. by giving "escape & evasion" lessons to your soldiers, improving the defenses, cleaning unit's weapons, camouflaging, etc. Return his weapon if he is doing OK.

F. Other Actions: Do not tell him his mother died until you have seen how he is doing in the morning, but don't let it go too long, or he will feel bitter and wonder why he wasn't told sooner. Best to have his unit commander or ISG tell him; otherwise maybe the Ranger Medic or a chaplain can help. If he asks for compassionate leave, this should not be arranged by the AMEDD, but should be worked out between him and the LRSD headquarters after he has returned to duty. (It is presumably already too late for him to attend the funeral). We do not recommend compassionate leave in his case; it would be better for him to be back working among Rangers. If he does go, it is essential to brief him about the normal combat behaviors he will show at home (vigilance, watching for ambush sites, startling easily, perhaps diving for cover at sudden sounds or movements) as well as terror dreams. He should not let his family overreact and take him to a hospital; just tell them the Rangers want him this way.

G. Warning Signs: Clouding of consciousness, neurologic signs, becomes unarousable, unequal pupils, etc. If general memory and military skills fail to improve. If he begins to show serious guilt or depression (with or without remembering what happened), hypnosis or amylal interview by an expert may help.

CASE #3

91A (E3) Medic/Ambulance Driver, female, just assigned to your unit on mobilization as a filler from a TDA Hospital.

She has been temporarily relieved from driving and assigned to your section because she has gotten very jumpy and "practically freezes up" when made to get into the ambulance. She startles at any sudden sound or movement and has trouble falling asleep. She says she has fearful thoughts of being killed or horribly wounded, or of that happening to her husband and 9 months old baby. They were in the combat zone when the war started. Her husband is in a combat unit, and she doesn't know whether the baby is still in theater or was taken out by the designated caretaker in the NEO (Noncombatant Evacuation Operation) plan. She is also scared she will be transferred to another new unit. Often her heart is pounding and skips beats, she feels short of breath, lightheaded, with substernal chest pain, and tingling and cramping of fingers and toes. She worries that she may have a heart attack. Her feet and hands get sweaty. She also has mild diarrhea.

She has not herself been shot at, but has been under the same general threat of air attack you all are under. While driving the ambulance, she was near a bombing attack and saw horrible sights of harm to civilian men, women and children. She can't get those images out of her mind.

She is apologetic about her inability to control her anxiety, but feels she is inadequate to drive or even to do maintenance on the vehicles.

Recent degree of responsibility: some.

Last rest period longer than 4 hours was today, but she couldn't fall asleep.

-
- A. What are the "more serious" symptoms of this "battle fatigue" and their contributing causes?
 - B. What other medical/surgical conditions need to be ruled out, and how?
 - C. Guidance For attending to physical needs (which, how, and by whom).
 - D. Guidance for your "active listener" (what to listen for and say).
 - E. Guidance for work assignments (what kind, when, with whom).
 - F. Other actions and concerns before/after return to full duty.
 - G. Warning signs that would show need to get further help or treatment.

CASE #3: Ambulance Driver (female); the School Solution

A. Impression: Battle fatigue with normal, common symptoms of high anxiety, caused by fear for self, worry about the safety of her husband and baby who were in the combat zone, reinforced by horrible sights and by having to do a strange job in a strange unit with little social support. Inability to sleep, even in a safe place, although a common symptom, is serious unless it can be improved.

B. Differential Diagnosis: Organic causes of anxiety such as caffeine or diet pills; generalized anxiety disorder; mitral valve prolapse or other unlikely cardiac pathology. Auscultation, quick EKG and explanation of hyper-ventilation could be reassuring, but any more extensive workup is likely to fixate the symptoms.

C. Physical Needs: She is from a nearby unit, but may need orienting and definitely needs a "buddy" to talk with while she is getting a good (mainly carbohydrate) meal, then hot shower (if possible) and told to get a good sleep before resuming duty. While trouble sleeping while anxious is "normal, common," she will get worse fast if she doesn't sleep, but beware of rewarding symptoms and disability by relieving her from unpleasant or dangerous duties. She may need a shot of alcohol or low dose valium to get to sleep, but should be told firmly that this is for one time only, and she will not need it regularly. Maybe also give Kaopectate or some such for the diarrhea.

D. Active Listener: Pick a woman, preferably married with children (but not with family in Combat Zone, yet). Allow to ventilate fear for self, family, horror at sights seen. Reflect that her feelings, jumpiness, heart pounding, etc. are all normal and others have them, too, but that she, like the rest of us, can and must do her job because others (soldiers, husbands, wives, civilians) depend on us.

E. Work Assignments: Keep busy. If practical, get her back on ambulances, doing maintenance with others in the unit the first day. She needs to make friends. But soon get her back to driving, maybe at first as assistant. She may want to shift to another type of medic duty which is safer or less lonely. Do this only if her prior experience clearly makes this the best sense for the unit and the unit has enough drivers. Otherwise, re-emphasize that we must live with the "luck of the draw," and her lot was to drive (until such time as the system calls for a job rotation as a matter of general fairness). If you take her off ambulance duty only because of fear, other drivers will rightly wonder why not them, too. If you must reassign, she should be sent to another unit; her fear of that may motivate her to get better so she can stay here.

F. Other Actions: Assure her (and follow through) that the unit adjutant (or Red Cross Representative, or whoever) will be given the names of her family to try to find out if they are safe. If others in the unit have the same worry, get them together after she has calmed down a bit. The point is, this is the unit's responsibility to try to find out, although you can't give guarantees that they will succeed or that the news will be good.

G. Warning Signs: If she fails to improve, and stays unable to safely drive ambulances or do some other useful job.

CASE #4

CW2 Physician Assistant, female, in your unit.

For the past five days she has been working in the Operating Rooms, assisting the surgeon working on seriously wounded soldiers. Responsibility and mission demand have been extreme, with little sleep. Her last rest longer than 4 hours was 3 days ago. She has been living on coffee and has started smoking cigarettes again.

Now, she says, she can't operate any more because her arms have become numb up to the elbows, and she can't seem to get her fingers to work. She doesn't know why, but fears it must be a neuropathy (a true disease of the nervous system which she learned about in PA school). She wants to be sent to the rear for neurologic testing. The surgeon said, "It's just hysterical."

Like all of you, she has been under threat of air attack, but there have been no casualties in your unit yet. She has seen many horribly wounded soldiers, and is bitter that the surgeon has turned over to her procedures she was never trained to do. She feels that her incompetence was responsible for some of them dying.

A. What are the "more serious" symptoms of this "battle fatigue" and their contributing causes?

B. What other medical-surgical conditions need to be ruled out, and how?

C. Guidance for attending to physical needs (which, how, and by whom).

D. Guidance for your "active listener" (what to listen for and say).

E. Guidance for work assignments (what kind, when, with whom).

F. Other actions and concerns before/after return to full duty.

G. Warning signs that would show need to get further help or treatment.

CASE 4: Physical Assistant (female); the School Solution

A. Impression: Battle fatigue with normal self-doubt and resentment for someone working far above her level of training, under very demanding circumstances, seeing and having to work on horribly-wounded young soldiers, with much sleep loss and physical fatigue (standing, cutting, sewing). It would be amazing if her fingers were still working well and she could feel much up to her elbows. But sleep loss makes people suggestible, and she is beginning to convince herself these are due to a physical disease. This can turn into a psychological excuse and escape (a true "conversion disorder") if not well handled.

B. Differential Diagnosis: Carpal tunnel syndrome, radiculopathy, peripheral neuropathy, Guillain-Barre (unlikely as does not involve feet as well), and other increasingly unlikely things like multiple sclerosis. Neurologic exam is justified only if symptoms persist and worsen after "treatment" below.

C. Physical Needs: She belongs to this unit, so knows where things are. Needs reassurance not to worry about her fingers and sense of touch until she has had some rest, and to be told firmly that she is off shift for the next 8-10 hours and needs to take care of herself. No coffee or cigarettes. Good meal (hot milk, carbohydrate rather than protein) with someone she can talk to. Then hot shower (if possible) and good long sleep. Good high protein breakfast (but light on the coffee) with active listener. Then back on duty.

D. Active Listener: Encourage to ventilate guilt, inadequacy and resentment first, then help her put things in perspective. She's only a PA, not a board certified surgeon. Think of the many she saved, not the few she could have (maybe) if she'd been someone else. Yes, the surgeon is a blankety-blank, but he left those cases to her because he trusted she could do something for them while he worked on others he knew she couldn't help (and may have felt inadequate to help himself). Or he may be showing signs of battle fatigue, himself, and may need support to keep him from folding up and leaving everyone to her. If she insists on worrying about her "neuropathy", put that in perspective, too; what else can she expect after spending four days straight, alternately scrubbing for surgery and trying to tie tiny knots in bloody wounds with rubber gloves on. It will get better with rest. Do not get involved in discussing her symptoms.

E. Work Assignments: As a PA, she is needed to do PA patient care duties, but try to give a brief break from the triage and horror surgery, e.g. taking sick call, doing minor surgery and follow-ups on the recovery ward where she sees the cases she did save and who will RTO or go home with the million dollar wound. But continue to reinforce her awareness that, right now, like it or not, she is the best we've got and will go back into saving what lives and limbs she can, even though everyone knows she can't save them all.

F. Other Actions: Find out what is going on with the Surgeon, whose remark that she is "just hysterical" was unhelpful. He may just be an insensitive "man of steel," but he may also be about to "overload" his own way. Try to stimulate support for him; find someone he can ventilate to. It will help a lot if he can give the PA the praise, encouragement and sense of cohesion that "we're all in this together." He may need someone giving the same to him.

G. Warning Signs: If her finger strength and sense of touch don't get better with rest and activities that use them. If she develops foot drop. If her feelings of guilt and resentment don't come back into perspective.

CASE #5

91A (E3) platoon medic, male, with an Armored Cavalry unit (Active Army sent to you from medical evacuation channels.

He has about a week of total combat experience, was himself almost killed and had a friend killed. He saw many horrible sights, including the burning of his platoon leader's tank after it was hit by anti-armor weapons. Although the platoon leader was gotten out alive, he died soon after and the medic feels responsible that it was his incompetence that let the lieutenant die. He has lost confidence in all his skills and feels he will be killed if he goes back into battle.

Recent degree of responsibility: extreme. Recent mission demand: extreme, with his last rest period longer than 4 hours occurring 3 days ago; severe sleep loss, much physical work, confinement, noise, vibration and fumes.

He appears sad, depressed and anguished, talks slowly and hesitantly in a low voice, and moves slowly. He says he can't get the horrible sights and sounds out of his mind, and is awakened by terrible dreams about it. He is not hungry. He feels death might be a relief, and could happen so easily in battle, but says he would never kill himself because of religion and family.

He is fully oriented to time, person, place and context, and is not deliberately uncooperative, although his hesitant speech makes communication difficult.

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- A. What are the "more" serious, symptoms of this "battle fatigue" and their contributing causes?
 - B. What other medical/surgical conditions need to be ruled out, and how?
 - C. Guidance for attending to physical needs (which, how, and by whom).
 - D. Guidance for your "active listener" (what to listen for and say).
 - E. Guidance for work assignments (what kind, when, with whom).
 - F. Other actions and concerns before/after return to full duty.
 - G. Warning signs that might show need to get further help or treatment.

CASE 5: Armor Platoon Medic (male), the School Solution

A. Impression: Battle fatigue with strong contribution of sleep loss, physical deprivation and personal danger, plus self-doubt, guilt and persistent thinking about one specific, horrible event. Too soon to tell whether his slow speech and movement, lack of interest in food, and thoughts that death would be a relief indicate major depression or just fatigue. Not dangerously suicidal, at least not yet.

B. Differential Diagnosis: Major Depression with melancholia: stimulant (amphetamine) withdrawal.

C. Physical Needs: new to unit; needs orientation, buddy and gear. If he has a personal weapon, do keep it with your unit's weapons at first, for safe keeping. Make sure he drinks fluids; offer good meal but don't insist he eat it; maybe have him wash off or take a hot shower, but mainly sack out 10-12 hours. May need strong reassurance to sleep, or shot of alcohol (or low dose valium) the first night. If he wakes up screaming, reassure and encourage back to sleep. Do not let him go off by himself alone, even to the latrine. On awakening, strong push on self-hygiene (shave, shower, clean clothes) encourage good breakfast.

D. Active Listener: Don't let him be alone. Get him to describe in detail what happened. Encourage him to express his personal fear, grief for friend, guilt over leader's death, feelings of inadequacy. After they are ventilated, help put in perspective: for example, say "You're only a medic; no one could have saved the platoon leader's life if his lungs were burned, not even our hot-shot surgeon -- we can't do heart-lung transplants on this battlefield." Reinforce his identity as a Cavalry medic. Do gently explore his feeling that he'd be better off dead; it may have gone after a good sleep, or may just be normal fear-reducing fatalism, but could be something more serious.

E. Work Details: Do not leave him alone to brood. Include him in a group doing light medic duties which will keep his mind occupied (not heavy physical work -- he's had plenty of that lately). Example: minimal care ward helping recovering soldiers. If he shows improvement, move him by steps on the 2d and 3d day back to working with the seriously wounded. Always maintain his identity as a CAV medic/combat veteran who is needed back at his unit in a day or two. Tell active listener and section chief that he is likely to want to stay as a medic with your unit; this is very understandable and your people probably will be in sympathy, but this needs to be counteracted. The objective is return to the CAV. It's the luck of the draw. He is a CAV veteran returning to comrades. A new replacement in his place will be less use and more likely to get killed, wounded or battle-fatigued again.

F. Other Actions: If possible, get people from his Cav unit to visit or send encouraging messages. If they say they don't want him back, then it would be appropriate to find him some other, less front-line medic assignment.

G. Warning Signs: If he still stays slowed down, with no appetite, unable to stay asleep, preoccupied with own death as a relief or inevitable, send him for mental health evaluation (but still give him your positive expectation he will get better quickly and return to duty).

CASE #6

E3 medical technician, male, in your unit, who is brought to you at 0330 under escort after an alert.

He was out on perimeter guard when he insisted he saw a group of enemy soldiers trying to sneak up; he saw them clearly and did not challenge, but just opened fire. He thinks he hit some but they all got away. Other sentries say they saw nothing, and the quick reaction force has searched the area extensively without finding any trace. They think he "Freaked out." Your soldier is upset, puzzled and scared, and insists "But I really saw them!" He does not show any other "crazy" behavior or abnormal thinking.

You know that although he has not had a high degree of responsibility, mission demand has been heavy, especially with extra details like guard duty. His last uninterrupted rest period longer than 4 hours was four days ago. He has been under the same threat of air attack as all of you, but has no direct combat experience. You know he is recently married, with his wife pregnant back in the States. He denies using any drugs or alcohol "since the unit came to the field" 10 days ago. He says he "used to drink a lot of beer on weekends with the guys in garrison, and admits "smoking pot in high school," but denies ever trying anything else.

- A. What are the "more serious" symptoms of this "battle fatigue" and their contributing causes?
- B. What other medical/surgical conditions need to be ruled out, and how?
- C. Guidance for attending to physical needs (which, how, and by whom).
- D. Guidance for your "active listener" (what to listen for and say).
- E. Guidance for work assignments (what kind, when, with whom).
- F. Other actions and concerns before/after return to full duty.
- G. Warning signs that would show need to get further help or treatment.

CASE #6: Medical Technician (male); the School Solution

A. Impression: Battle fatigue with "normal" visual misperceptions/hallucinations due to sleep loss in a soldier who is naturally tense and worried about enemy attack.

B. Differential Diagnosis: Drug abuse, psychotic disorder (both unlikely, given these symptoms). If available, a routine urine drug screen wouldn't hurt, but don't focus on this.

C. Physical Needs: Reassure everyone that this is quite common with sleep loss, and send him for good long sleep (6-10 hours). Since he belongs to your unit, no other special provision is needed except to assign someone specific to talk with him in the morning (or do this yourself). (Go back to sleep yourself.)

D. Active Listener: When he is awakened, find out how he feels about what he saw and did last night. If he accepts it as a sleep illusion, continue reassurance that it is "normal" but must be guarded against. Ask again about drug or alcohol use, and impress on him the importance of reliability and honesty about this now that everyone's lives are at stake. (Also talk with his comrades in the same way. If they think he is "clean", he probably is. If they insist that he's clean, but act embarrassed, or if they think he has something but isn't sharing it, investigate further.)

E. Work Assignments: If there are no other warning signs (see below) return to full regular duties, including perimeter guard the next time he comes up on the roster. Tell him to take time to be sure his tired brain isn't playing more tricks, and specify just what you will do to him if he opens fire again without challenging first. Those shadows he mistook for the enemy could just as easily have been a friendly patrol, or people bringing a patient in for care. But if you take him off perimeter guard, odds are someone else will see and fire on the "enemy" tomorrow night.

F. Other Actions: Try to keep track of all those extra duty details, and not let too many of them fall on any of your people again to prevent them from getting the minimum 4 hours sleep per 24 hours. Try to give them extra sleep the afternoon or evening before night guard duty.

G. Warning Signs: 1) paranoid ideas, such as insisting that he really did see and wound some enemy soldiers, but the other sentries and the quick reaction force are deliberately hiding the evidence to make him look bad or because they are really Commie spies; 2) other strange thinking, speaking or behaving; 3) evidence of drug misuse which cannot be corrected by stern counseling and disciplinary measures.

CASE #7

E6 Crew Chief, male, of Helicopter Ambulance Detachment attached to your unit.

Vietnam veteran, good NCO whose arms have begun to shake uncontrollably. He feels very tense and fearful, but doesn't know why. He states that "I can't seem to get ahold of myself."

Two days ago, the helicopter he was in crashed; he was unhurt, although the copilot was evacuated for serious internal injuries. He has had trouble sleeping since then, with frightening dreams about Vietnam. He also reports mild diarrhea and a pain or "knot" in his stomach which is worse at night and on awakening but gets better when he eats. He vomited (dry heaves) this morning while waiting to take off in a helicopter (his first flight since the crash), and was taken off flight status temporarily. The shaking just began an hour ago and scares him.

Recent degree of responsibility: extreme. Recent mission demand: heavy, with much flying time, but adequate food, hygiene, sleep time. Last rest period longer than 4 hours was last night.

Another member of the unit says the sergeant used to spend every evening at the NCO Club back in garrison and commonly had a beer with lunch. The sergeant denies heavy drinking ("Sure, I'd have a few scotches at the Club; my wife and kids are back in the States and all my friends are at the Club. I've never had any problem with my drinking.") He did bring a couple bottles of scotch when the unit deployed and has taken "a couple of shots to calm my nerves," but is husbanding the bottles to make them last, "in case it's a long war." He denies alcoholic blackouts, vomiting blood or tarry stools.

His record shows his health has been good. He has never been reported drunk on duty or been stopped for driving under the influence.

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- A. What are the "more serious" symptoms of this "battle fatigue" and their contributing causes?
 - B. What other medical/surgical conditions need to be ruled out, and how?
 - C. Guidance for attending to physical needs (which, how, and by whom).
 - D. Guidance for your "active listener" (what to listen for and say).
 - E. Guidance for work assignments (what kind, when, with whom).
 - F. Other actions and concerns before/after return to full duty.
 - G. Warning signs that would show need to get further help or treatment.

CASE #7: E6 Crew Chief (male); the School Solution

A. Impression: Battle fatigue with gross tremor and physical anxiety symptoms two days after a walk-away helicopter crash. May have a Vietnam Posttraumatic Stress component. He seems to expect himself not to feel anxious in this objectively scary war. History of heavy drinking.

B. Differential Diagnosis: Possible alcohol withdrawal and impending DTs. Possible ulcer disease, gastritis, esophageal reflux, etc. A thorough physical exam is justified as "routine," looking for other stigmata of alcoholism, but evacuation for extensive work-up or premature focus on "stomach" or "alcoholism" could fix these as conversion disorder symptoms. Recommend treating as battle fatigue while simultaneously watching closely for the danger of DTs. See how he does with positive expectation and emotional support, but try to use no medicines and NO alcohol.

C. Physical Needs: He is at his own unit and has not had serious physical deprivation, but insomnia could lead to worsening. Reassurance, respite from stressful duty, hot shower and symptomatic treatment of GI symptoms may be enough to stop the shaking and get him to sleep. If not, try low-dose valium or faster-acting benzodiazepine (not alcohol), one time only. If low dose is not enough and DTs seem likely, give higher doses, but this probably means he will not return to flight duty, and may need MOS reclassification or evacuation for formal detoxification and rehabilitation.

D. Active Listener: Get him to talk about the crash, fears he may have, possible home front problems, Vietnam memories, problems in unit, etc. Also gently press him to give a complete account of alcohol use. Maintain his identity as crew chief with valuable experience who is needed back on flight status.

E. Work Assignments: Flight-related ground duties after good sleep, breakfast, chance to talk. Level of responsibility depends on how he is improving, whether you have had to medicate with Valium, etc. If he is functioning again with no valium or alcohol, get him back in a flying helicopter on a low-stress, low-responsibility mission as soon as safe to, (but obviously, the pilot will be unhappy if he goes into DTs in flight).

F. Other Actions: Get more information from teammates about his drinking habits, performance record. Counsel on alcohol consumption if suspicions of excess use are confirmed, and follow up with supervision and positive support to keep him alcohol-free.

G. Warning Signs: Sneaks drinks or is otherwise unreliable. Evidence of GI bleeding. "Alcoteptic seizure" while sleeping, or grand mal seizure while awake. Tremor gets worse and requires high doses of Valium to suppress it. Sudden onset of hallucinations (mostly visual), illusions, delusions, disorientation and other signs of the DTs.

Question: Would you handle this case differently if this had been the surgeon in case 4 who called the PA "hysterical"?